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HARVARD STUDIES
IN
CLASSICAL PHILOLOGY

*EDITED BY A COMMITTEE OF THE CLASSICAL
INSTRUCTORS OF HARVARD UNIVERSITY*

VOLUME IV

BOSTON, U.S.A.

PUBLISHED BY GINN & COMPANY

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EDITORIAL COMMITTEE.

JAMES B. GREENOUGH.

FREDERIC D. ALLEN.

MORRIS H. MORGAN.

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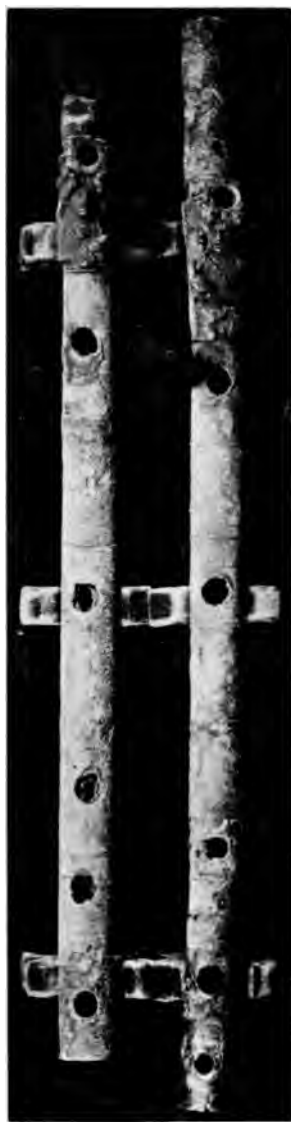
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PLATE I.



1



2

3

All of these instruments may be classed, according to their acoustic properties, as 'open' or as 'stopped' pipes. An open pipe gives the complete series of harmonics, the octave, the twelfth, the double octave, and the third above the double octave of the fundamental tone of the pipe. A stopped pipe produces a fundamental tone one octave lower than the corresponding tone of an open pipe, but gives a series of harmonics including only the twelfth and the third above the double octave of the fundamental tone.

FINGER-HOLES, THEIR POSITION AND NUMBER.

The notes of the musical scale lying between the fundamental tone of the pipe and the first harmonic can be produced only by opening, in the side of the pipe, holes of proper size at appropriate distances from the end of the pipe and from each other. To produce the diatonic scale through continuous octaves, beginning with the lowest register of the instrument, six such holes are required for an open pipe, eleven for a stopped pipe. To produce the chromatic scale even more holes are necessary. Theoretically, the position of each of these holes for a given scale can be mathematically determined, but in practice the position of the holes is largely determined by experiment, and the holes are often slightly out of place, the result of which is a defect in the pitch of every note dependent on a hole improperly placed. But every performer on a wind-instrument has it in his power, by means of well-known devices, to correct minor defects in the pitch of his instrument caused by improper location of the finger-holes, and, no matter how perfectly his instrument is constructed, he is under the necessity of making these corrections in pitch. That this was equally true of ancient artists and instruments is apparent from a passage in Aristoxenus (ed. Marquard, p. 60, chap. 42-43).

The extent to which the pitch of a note can be altered by these various devices is, however, limited, and the proper position of the finger-holes, especially before the adoption of mechanical means for closing such holes as were not in use, must have been a very difficult problem for the ancients to solve. Doubtless many of the treatises mentioned in Athenaeus IV. 80 and in other writers dealt, at length,

III sqq., and wherever in this article Egyptian instruments are mentioned the facts are drawn from that source, unless statement to the contrary is made.

with this subject ; one treatise mentioned by Athenaeus XIV. 36, the *περὶ αὐλῶν τρήσεως* of Aristoxenus, was perhaps devoted exclusively to this subject. This work comprised not less than two volumes, for the reference is *ἐν πρώτῳ περὶ αὐλῶν τρήσεως*, implying that, at least, a second volume existed. The loss of this treatise is all the more to be regretted from the fact that it was the work of such an eminent authority on ancient music.

No treatise on the boring of pipes has been preserved to us even in a fragmentary form, and I have found but two direct statements, in ancient writers, as to the proper position of the finger-holes. The first is from Aristotle, Prob. XIX. 23, *Διὰ τί διπλασία ἡ νήτη τῆς ὑπάτης ; ἢ πρῶτον μὲν ὅτι ἐκ τοῦ ἡμίσεος ἡ χορδὴ ψαλλομένη καὶ [ἡ] ὅλη συμφωνοῦσι διὰ πασῶν ; ὁμοίως δὲ ἔχει καὶ ἐπὶ τῶν συρίγγων · ἡ γὰρ διὰ τοῦ μέσου τῆς σύριγγος ¹ τρήματος φωνὴ τῇ δι' ὅλης τῆς σύριγγος συμφωνεῖ διὰ πασῶν. ἔτι ἐν τοῖς αὐλοῖς τῷ διπλασίῳ διαστήματι λαμβάνεται τὸ διὰ πασῶν, καὶ οἱ αὐλοτρῦπαι οὕτω λαμβάνουσιν, ὁμοίως δὲ καὶ τὸ διὰ πέντε τῷ ἡμιολίῳ. ἔτι οἱ τὰς σύριγγας ἀρμοττόμενοι εἰς μὲν τὴν ὑπάτην ἄκραν τὸν κηρὸν ἐμπλάττουσι, τὴν δὲ νήτην μέχρι τοῦ ἡμίσεος ἀναπληροῦσιν, ὁμοίως δὲ καὶ τὴν διὰ πέντε τῷ ἡμιολίῳ καὶ τὴν διὰ τεττάρων τῷ ἐπιτρίτῳ διαστήματι λαμβάνουσιν. ἔτι αἱ ἐν τοῖς τριγώνοις ψαλτηρίοις τῆς ἴσης ἐπιτάσεως γινομένης συμφωνοῦσι διὰ πασῶν, ἡ μὲν διπλασία οὖσα, ἡ δὲ ἡμίσεια τῷ μήκει.²*

From this passage we learn that the finger-hole by which the octave was produced was bored in the middle of the tube ; the hole to produce the fifth was so placed that the length of the entire instrument and the length of the portion above the hole should be in the ratio 3 : 2, and the hole to produce the fourth was so placed that the entire instrument and the portion above the hole should be in the ratio

¹ The discussion of the *syrix* here mentioned I have reserved for a later place in this article (page 19).

² The text of this problem in the various editions is in such condition that certain changes in words and in punctuation seem necessary in order to make the passage intelligible. The changes in punctuation are so obvious that they need no justification. I have inserted *ἡ* before *ὅλη* and have restored *συμφωνοῦσι* which is found in one Ms. in place of *συμφωνοῦσα*. For *αὐλοῖς* the Mss. read *ἄλλοις* and for *ἔτι* of the following sentence *ὅτι*; both of these changes were suggested by Aug. Wagener, as I learned after I had myself decided upon them. Finally *αἱ* must be read for *οἱ* in the Mss. in the last sentence, as is evident from the *ἡ μὲν* and the *ἡ δέ* which follow.

4 : 3. Assuming that the finger-holes have a diameter equal to the internal diameter of the tube itself, these are the positions which they should theoretically occupy in an instrument of cylindrical bore.

The second statement is from a late Roman source, Favonius Eulogius in the commentary to the 'Somnium Scipionis' (Cic. ed. Bait. et Orell. Vol. V. pt. I. p. 412) : *si tibiam cuiuslibet longitudinis sumas, et octava eius portione deducta caavernam imprimas, tonus auditur ; si sextam decimam ex reliqua metiaris hemitonium consequitur.* This however is a mere 'rule of thumb,' and it is doubtless of late origin, since it implies the existence of a tempered scale in which all of the tone-intervals are equal, and in which the interval of the semitone is half as great as that of the tone. Even as a 'rule of thumb' this is too inexact, for instead of '*octava*' we should have '*nona* eius portione deducta.'

From Macrobius, in *Somn. Scip.* II. 4, 5, we get the further information that not all finger-holes had the same diameter : *nec secus probamus in tibiis de quarum foraminibus uicinis infantis ori sonus acutus emittitur, de longinquis autem et termino proximis grauior, item acuta per patentiora foramina, grauior per angusta.* This information is of value since it proves that the ancient instrument-makers were familiar with an important principle utilized to-day in the manufacture of wind-instruments, namely, that a hole of small diameter nearer the mouth-piece may be substituted for one of greater diameter in the position which the hole theoretically should occupy.

The earliest form of αἰλός, to whichever of the types of instrument mentioned above it belonged, must have been, from a musical point of view, a very imperfect instrument. Pollux, IV. 80, says that, until the time of Diodorus of Thebes, the αἰλός had only four finger-holes, and Acro,¹ in the scholion to Hor. A. P. 202, quotes Varro as having twice made the statement that the tibia anciently had only four holes, while others maintained that it had only three. No Greek or Roman pipes with only four finger-holes have, as yet, been found, although they are not infrequently represented in works of art ; but unquestionably, until some mechanical device was employed for

¹ Varro ait in tertia disciplinarum et ad Marcellum de lingua Latina, quattuor foraminum fuisse tibias apud antiquos, et se ipsum ait in templo Marsyae uidisse tibias quattuor foraminum, quare quaterna tantum foramina antiquae tibiae haberunt ; alii dicunt, non plus quam tria.

closing the holes not in use, the pipe, when used in pairs, cannot have had more than four holes, unless the thumb was used to close one hole.

Of thirty-four Egyptian pipes described by Loret¹ twelve have but three holes each and thirteen only four holes each, while the primitive pipes of the various ethnological collections show, with few exceptions, four holes each, — indirect evidence which helps to confirm the truth of the statements of Pollux and Varro.

On an instrument with but four finger-holes it is, of course, impossible to produce a continuous scale beginning with the lowest register of the instrument. Either, then, this lowest register of the αὐλός was not used in the earliest times, or the musicians made use of a scale in which several tones of the lowest octave were wanting. In the absence of any direct testimony showing which of these methods was followed, any attempt to solve the problem is simply a matter of conjecture. Perhaps the simplest solution of the problem would be to assume that the notes of the pipe corresponded with the notes of the tetrachord, although in this case but three holes would be necessary, since on a pipe with four holes five notes can be produced. By neglecting the lowest register of the instrument and playing solely in the harmonics a complete diatonic scale can be produced on an open pipe with three holes, or on a stopped pipe with four holes, with the exception that on the stopped pipe the *octave* is a semitone too high.

It is, however, chiefly from the historical point of view that the determination of the scale of this simple instrument is of interest to us, for the αὐλός did not long retain its primitive character, but was constantly improved and perfected; in fact, the names of some of the artists by whom improvements were made have been preserved to our time. Diodorus of Thebes is said to have improved the αὐλός by increasing the number of finger-holes; Pollux IV. 80, *πολύτρητον ἐποίησε . . . πλαγίας ἀνοίξας τῷ πνεύματι τὰς ὁδοὺς*.

Whether or not this improvement was actually the work of Diodorus, the ancients certainly did possess αὐλοί with more than four finger-holes. This is clear, not only from works of art, but from the actual remains of musical instruments to be seen in various museums of Europe.

¹ Journal Asiatique, 1889, pp. 197 sqq.

Probably the increase in the number of holes was not a large one at first, for in the existing instruments the number of holes varies from five to fifteen, and the αὐλός certainly did not reach its final development until a later period than that of Diodorus, as is shown by the statements of the ancients themselves. Pronomus, the celebrated musician and the teacher of Alcibiades, improved the αὐλός by making it possible to play on a single pair of instruments the three musical scales in use at that time, whereas before his time a separate pair of instruments was required for each scale. Pausanias IX. 12. 5, Ἀνδριάς τέ ἐστι Προνόμου ἀνδρὸς αὐλήσαντος ἐπαγωγότατα ἐς τοὺς πολλούς. τέως μὲν γε ἰδέας αὐλῶν τρεῖς ἐκτῶντο οἱ αὐληταί, καὶ τοῖς μὲν αὐλήμα ἡῦλον τὸ Δωρίον, διάφοροι δὲ αὐτοῖς ἐς ἁρμονίαν τὴν Φρύγιον ἐπεποιήντο οἱ αὐλοί, τὸ δὲ καλούμενον Λύδιον ἐν αὐλοῖς ἡῦλετο ἁλλοίοις. Πρόνομος δὲ ἦν ὃς πρῶτος ἐπενόησεν αὐλοὺς ἐς ἅπαν ἁρμονίας εἶδος ἔχοντας ἐπιτηδείως, πρῶτος δὲ διάφορα ἐς τοσοῦτο μέλη ὑπ' αὐλοῖς ἡῦλησε τοῖς αὐτοῖς. This same story is told of Pronomus by Athenaeus XIV. 31, and although there are other ways in which this improvement could be effected, the simplest method would be to increase the number of finger-holes, closing temporarily such holes as were not required for the particular scale in which the musician wished to perform. It is also possible that some of the mechanical attachments to the instrument, which will be described later, were at this time brought into use.

In works of art of the later period the instruments are sometimes represented as provided with a large number of finger-holes, as for example in Plate I. 1, at the beginning of this article, which represents the pipe in the hand of a muse from a sarcophagus in the Louvre. This pipe has at least nine lateral openings. Of the Egyptian instruments described by Loret, two have five holes each, five have six holes each, one has eight, and one eleven holes. Of four Greek pipes in the British Museum three have six holes each, one five, and of the four pipes found at Pompeii in 1867 two have ten, one has twelve, and one fifteen holes. These instruments from Pompeii can very fittingly be called *πολύτρητοι*¹ or *multiforátiles*,² adjectives which are not infrequently used by ancient writers to describe the αὐλός or tibia.

¹ *πολύτρητος*, Pollux IV. 80., Anth. Pal. 9. 266, 505. 5.

² *Multiforátilis*, Apul. Flor. 3, p. 341, Met. 10. 32; *multifora*, Ov. Met. XII. 158, Sen. Agam. 358; *multiforabilis*, Apul. Met. 10, p. 254, Sidon. ep. 8. 9.

BANDS.

When the number of holes in the pipes was increased to such an extent that the fingers could no longer close them all at the same time, naturally some device for closing the holes not in use had to be adopted. In the case of the pipes found at Pompeii this device consisted of bands of silver encircling the tube of the instrument, one for each hole, and pierced by a hole which corresponded exactly with the hole in the tube itself. These bands could be turned round on the tube and made to cover the holes in it, as is indicated by the position of the bands on the instruments as they were found. In some cases the band is so placed that the hole is open, and in other cases the hole is partially or entirely covered by the band. The bands are fitted neatly together, so that originally the whole body of the instrument was covered by them, and it is probable that Horace had in mind such an instrument when he says, A. P. 202, "*tibia non ut nunc orichalco uincta*." Two of the pipes in the British Museum are also provided with metal bands, and the same is true of a fragmentary instrument in the same Museum; cf. C. T. Newton, *Halicarnassus*, Vol. II. pt. 1, p. 339.

Similar bands are represented in at least two reliefs on sarcophagi in the Louvre, one No. 240 of Fröhner's catalogue, representing a girl blowing on two pipes, each of which has a number of lines cut on it to represent the places where the bands join each other, although in this case no holes are represented in the bands; the second, Fröhner, No. 378, a sarcophagus representing the Muses with their attributes, Euterpe holding in each hand a pipe, the one in the right hand broken. The instrument in the left hand is shown in Plate I. 1, and the bands and the finger-holes in them can be easily distinguished. Perhaps the lines which are occasionally seen on the pipes in vase paintings are intended to represent these bands (cf. Baumeister's *Denkmäler*, Fig. 592, and von Jan's description). Not infrequently there is represented in works of art an additional device to enable the performer to turn the bands.¹ This device consisted of a hook-shaped projection from the surface of the band and seems to have been called

¹ Relief in Naples Mus. No. 6684; relief in the Vatican, cf. Baumeister, fig. 598; sarcophagus in the Uffizi Gallery, Florence, representing contest between Muses and Sirens.

by the Greeks *κέρας* or *βόμβυξ* (cf. Arcadius de accentibus, p. 188, ed. Barker) ἀλλ' ἐκάστῳ πνεύματι οὐκ ἀτέχνως οὐδ' ἀμούσως τὰ σημεῖα ἐπέθετο· καθάπερ οἱ τοῖς αὐλοῖς τὰ τρήματα εὐράμενοι, ἐπιφράττειν αὐτὰ καὶ ὑπανοίγειν ὅποτε βούλονται, κέρασί τισιν ἢ βόμβυξιν ὑφορκίοις (ὑφολκίοις) ἐπετεχνάσαντο, ἄνω καὶ κάτω, καὶ ἔνδον τε καὶ ἔξω στρέφοντες. ταῦτα οὕτως, κἀκείνοις ὥσπερ κέρατα τὰ σημεῖα ἐποιήσατο τῷ πνεύματι, ἐν τι σχῆμα ἐκατέρῳ σημηνάμενος. τοῦτο δὴ τὸ ἐν ὥσπερ αὐλῷ εἰκόσ, ὅπερ ἔνδον καὶ ἔξω στρέφων ἐπιφράττειν τε καὶ ὑπανοίγειν τὸ πνεῦμα ἐδίδαξεν.

The *κέρατα* themselves are not in existence on any of the instruments which have been found, but the pipes from Pompeii have, attached to many of the bands, little sockets into which such arrangements could be inserted, and these sockets were undoubtedly intended to serve this purpose. Probably such a socket was originally attached to each band of these Pompeian instruments; the oxidization of the metal of the bands has, however, caused all trace of the socket to disappear in some cases, although on thirteen of the bands the sockets, or traces of them, are still to be seen.

The *κέρατα* are frequently shown in works of art in which bands are not represented on the instrument.¹ It seems reasonable to conclude in all such cases that the omission to represent the bands was due solely to careless work on the part of the artist, for without the bands the *κέρατα* would be useless. Furthermore, the frequent representation of the *κέρατα* is conclusive evidence that the bands were an almost universal addition to the instrument, although unfortunately the exact name by which they were called has not been preserved to us, at least in any recognizable form.

SIDE-TUBES.

Still another device is frequently represented in works of art, but has not been found on any of the instruments hitherto discovered. It consists of a short tube, often represented with a flaring end, directly over a hole in the pipe. This arrangement is often rudely represented in works of art, and has given rise to the theory that holes not in use were often stopped with a plug (cf. von Jan in Baumeister's *Denkmäler*, p. 557). That this arrangement is to be re-

¹ This is notably the case in wall-paintings; e.g. Helbig *Wandgemälde*, Nos. 56, 69, 730, 765, etc.

garded as a tube and not as a plug is, however, shown conclusively in bas-reliefs; ¹ for, wherever the sculptor has paid any attention to detail in his work, the hole in the tube is clearly represented, and inferences drawn from works of art in which the details are but rudely executed are, in the absence of literary evidence, of very little value.

On the whole, the representations of αὐλός in works of art are as accurate as could be expected, for naturally the artists did not strive for absolute perfection in all the minor details of a musical instrument which played a very subordinate part in the entire work. Such care in detail as the artist has shown in representing the pipe in the hand of the muse in Plate I. 1, is exceptional, although of the greatest value to the student. ² The fact, therefore, that the artists have so frequently represented these attachments as tubes is the best of evidence that they were regularly tubes, and not plugs to stop the holes. These tubes were sometimes, if not always, mounted on bands such as have

¹ The following list includes only a few of the reliefs in which the holes in the tubes are represented: Paris, Louvre, Fröhner's Cat. No. 85 (photograph in H. d'Escamps, *Marbres du Musée Campana*, pl. 25); Fröhner, No. 378 (heliotype from photograph pl. I. 1, of this article); Munich, Glyptothek, No. 188 (reproduction from a photograph, Baumeister, fig. 1186); Rome, Lateran Museum, No. 751 (inexact engraving in *Mon. dell' Inst.* VI.-VII. 80, 2); Vatican Museum, sarcophagus representing Cupids as Muses (inaccurate engraving in *Museo Pio Clem.* IV. 15); Florence, sarcophagus representing contest between Sirens and Muses (cf. Baumeister, fig. 1704, from an engraving); London, British Mus., sarcophagus from Townley Coll. (inaccurate engraving in *Anc. Marb.* of the B. M. II. 35).

² Engravings of ancient works of art are, with few exceptions, very inaccurate in matters of detail, although they give, with sufficient accuracy, the main features of the original. Not one of the various engravings of the instrument shown in Plate I. 1, represents either bands or holes above and below the side-tubes of the pipe. In the *Museo Pio Clementino*, Vol. IV. pl. 15, the pipes held by the youth who represents *Euterpe* have each six side-tubes; in the original there are only four represented. In Millin, *Galerie Mythologique*, Plate XX. Fig. 64, *Euterpe* holds two pipes which might be mistaken for the rounds of a chair, while in the original one of the pipes has five side-tubes, the other seven, and the holes in the tubes are clearly shown. Even in such a work as the *Museo Borbonico*, Vol. XI. tav. 59, the female figure is represented holding pipes with five side-tubes, while in the original only four are shown. Wherever in this article reference is made to a work of art, I have seen either the object itself or a photograph of it, and have not depended on the engravings.

already been described, and tubes thus mounted with a separate band for each tube are shown in the plate to which reference has been made. It is, of course, not impossible that such tubes were originally attached to the instruments found in Pompeii, and that the oxidization of the metal has caused all trace of them to disappear, although this is very improbable, especially if any considerable number of such tubes were in use on these instruments. The number of tubes represented on a single instrument varies from one to seven, the latter number occurring on the pipe of a muse in the British Museum and inaccurately shown in Millin, *Galerie Mythologique*, Plate XX. Fig. 64.

The words of Pollux quoted above, p. 5, probably refer to this very device: *πλαγίας ἀνοίξας τῷ πνεύματι τὰς ὁδοὺς*, for surely the words *πλάγμαι ὁδοί* might well be used to describe these tubes.

There is no direct evidence to show that the bands on which these tubes were mounted could be turned round on the pipe so as to cover the holes in it, but it is almost impossible to conceive that they could not be thus turned, for not only are the tubes occasionally mounted on separate bands as in our plate, but the *κίρατα*, or arrangements for turning the bands, which have already been described, are often shown on works of art in connection with the tubes, and occasionally, as in the relief from Zoega, Baumeister's *Denkmäler*, Fig. 594, there is such an arrangement corresponding to each of the tubes.¹ The effect produced by these tubes when in use would be to lower the pitch of the pipe, for the tone would be produced at the outer end of the tube and not, as ordinarily, at the surface of the pipe.

A somewhat similar arrangement is to be found on some of the Boehm flutes manufactured in England, and is described by E. S. Rockstro in his book on the Flute, p. 183. The C[♯] hole of the ordinary flute serves both as a note-hole in producing C[♯] and as a vent-hole in producing several other notes. It is ordinarily placed near its proper position as a vent-hole, which is somewhat nearer the embouchure than the proper position of the C[♯] hole, and the diameter of the hole is diminished to allow the production of C[♯], as a result of which the intensity of this note is weakened. To remedy this defect, in the flute described by Rockstro, the C[♯] hole is bored

¹ This relief I have not seen, but in the following wall-paintings which I have seen there is a *κίρατα* for each tube: Helbig, Nos. 730, 765, 1140.

with nearly the same diameter as the other holes, in its proper position as a vent-hole, and into this hole a short tube is inserted. The note C[♯] is produced by the combined length of the flute to this point and the tube, but when the hole is used as a vent-hole in producing the harmonics, the connection with the outer air is of course at the bottom of the tube, and the length of the tube does not influence the sound.

The pipe held by the muse, Plate I. 1, shows five of these tubes and in addition several bands with holes but without tubes, from which it must be inferred either that the tubes could be attached to the instrument and removed from it at the will of the performer, or that only certain holes of the instrument were provided with this arrangement. There is no direct evidence by which this point can be settled, but in case the tubes were permanently attached to the bands there would be no satisfactory reason for their existence, unless the band was provided with a second hole, which could be brought into use by turning the band until this second hole, and not the tube, covered the hole in the instrument. There is nothing in any of the reliefs to indicate the existence of a second hole, but in Proclus (comm. in Alcibiad. p. 197, ed. Creuzer) the statement is made *ἕκαστον γὰρ τρύπημα τῶν αὐλῶν τρεῖς φθόγγους, ὥς φασιν, τοῦλάχιστον ἀφίησιν. εἰ δὲ καὶ τὰ παρατρύπηματα ἀνοιχθείη, πλείους.* A second hole in the band, such as has been described, might well be called a *παρατρύπημα* and would double the number of notes that could be produced on the instrument. With such a double arrangement and with tubes of proper length, a difference of half a tone in pitch could be produced by employing alternately the tube and the hole. Unfortunately, the word *παρατρύπημα* is found in no other place in Greek literature, so that any attempt to explain its meaning is purely conjectural, and while the explanation given above satisfies all the requirements of the passage in Proclus, I offer it simply as a suggestion.

ΚΟΙΛΙΑΙ.

As regards the *κοιλίαι*, which are mentioned by Aristoxenus (Harm. p. 60, ed. Marquard) as a part of the *αὐλός*, probably the main bore of the instrument is meant. There is nothing against this view except the use of the plural in this passage of Aristoxenus, while the following passages from ancient writers favor such an explanation.

Porphyrus ad Ptol. p. 217, ed. Wallis: πάλιν δὲ ἐὰν λάβῃς δύο αὐλούς, τοῖς μὲν μήκεσιν ἴσους· ταῖς δὲ εὐρύτησι τῶν κοιλῶν διαφέροντας· καθάπερ ἔχουσιν οἱ Φρύγιοι πρὸς τοὺς Ἑλληνικοὺς· εὐρήσεις παραπλησίως τὸ εὐρυκοιλίον ὀξύτερον προέμενον φθόγγον τοῦ στενοκοιλίου· θεωροῦμεν γέ τοι τοὺς Φρυγίους στένους ταῖς κοιλίαις ὄντας ἐπὶ πολλῷ βαρυτέρους ἤχους προβάλλοντας τῶν Ἑλληνικῶν. Here the κοιλία can hardly be anything else than the bore of the instruments, and the same is true of Nicomachus, p. 9, ed. Meibom: ἀνάπαλιν γέ, τῶν ἐμπνευστῶν αἱ μείζονες κοιλιώσεις, καὶ τὰ μείζονα μήκη, νωθρὸν καὶ ἔκλυτον. Furthermore, the word *cauernae* is used in Latin with the same meaning, Servius ad Aen. IX. 615: tibiae aut Serranae dicuntur, quae sunt pares et aequales habent *cauernas*; aut Phrygiae, quae et impares sunt et inaequales habent *cauernas*.

KINDS OF PIPES.

A long list of names of αὐλοί has been preserved in Pollux IV. 74 sqq. and in Athenaeus IV. 76 sqq., and from these lists it is apparent that the number of different varieties of this instrument was very great. In some cases, however, two or more names for the same variety of instrument have been preserved, as can be clearly shown, and this is probably true in many cases where proof is impossible. In the following pages an attempt has been made to distinguish, so far as possible, between the different kinds of instruments with reference to the manner in which the tone was produced on them, and then to classify the instruments themselves with reference to the pitch of their tones.

SINGLE PIPES.

The performer either made use of a single pipe, or he played upon two pipes at the same time. Several names of single pipes have been preserved, although perhaps not one of them is a name which was intended to distinguish the entire class of single pipes from the class of double pipes. The word *μόναυλος* seems to have as its first element the adjective *μόνος*, and unquestionably Martial had this view when he wrote XIV. 64: —

Ebria nos madidis rumpit tibicina buccis:
Saepe duas pariter saepe monaulon habet."

It is apparent, however, from a passage in Pliny N. H. VII. 204, that not all single pipes belonged in the class of *μόναυλοι*. His words are: *musicam Amphion (inuenit) fistulam et monaulum Pan Mercuri, obliquam tibiam Midas in Phrygia, geminas tibias Marsyas in eadem gente.* The *tibia obliqua* was undoubtedly a single instrument, but it is not classed by Pliny among the *μόναυλοι*. This same distinction between the *μόναυλος* and the *πλαγίαυλος* is made by Juba as quoted by Athenaeus IV. 78, and it is possibly from Juba that Pliny's statement is drawn. Pollux, IV. 75, distinctly states that the *μόναυλος* is of Egyptian origin: *μόναυλος εὐρημα μὲν ἐστὶν Αἰγυπτίων*,¹ and since among the Egyptians the word *ma-it*² was the general name for αὐλός, which was, however, used in a restricted sense to indicate an instrument held like the clarinet or oboe, as distinguished from one held as the flute is held, von Jan, Baumeister's Denkmäler, p. 562, is of the opinion that the *μον-* of *μόναυλος* is derived from the stem *maim* or *mom* of this Egyptian word, and that it has no connection with the Greek word *μόνος*.

There is no etymological reason whatever for assuming that this word is not composed of *μόνος* and αὐλός, exactly as it seems to be; and, furthermore, the *μόναυλος* was, as is implied in this derivation, always a single pipe.

From the fact that the *μόναυλος* is thus contrasted with the *πλαγίαυλος*, it would appear that the *μόναυλος* was a single pipe blown at the end.

The single pipe is very rarely represented in Greek and Roman works of art; in nearly every statue in which it is represented the instrument has been arbitrarily restored, and in very many instances it is absolutely impossible to prove that the hand originally held a pipe of any sort.³ In reliefs and paintings where the instrument is not a restoration two classes of αὐλοί can be distinguished, one held

¹ Cf. Athenaeus IV. 78.

² Cf. Loret, p. 126.

³ The single pipe blown at the end like a clarinet is represented on a sarcophagus in the Louvre, Fröhner, No. 240, and in the following wall-paintings, Helbig, Wandgemälde Nos. 227, 767, and possibly it is not a restoration in a statue of Euterpe in the Naples Museum (no No.). All of these representations I have seen, as also the following in which the instrument has been restored; Louvre, Fröhner, Nos. 287, 382, 395; Rome, Cap. Mus., Helbig's Führer, Nos. 430(12), 521(10); Vatican, Helbig, No. 209(406); Munich, Glyptothek, Nos. 105, 106; Berlin, Antiken Skulpturen, 258, 259, 602.

horizontally like the modern flute, and the other held in front of the performer like a clarinet or oboe. If the name *μόναυλος* has been correctly interpreted in the preceding paragraph, it would naturally apply only to the second class of instruments named above; but as instruments of this class seem to have the same general characteristics as the double pipe, they will be treated in connection with the double pipes.

Instruments of the first class were probably designated as a rule by the name *πλαγίανλος*, Latin *tibia obliqua*, although there were undoubtedly separate names for the different varieties of instruments of the class.

The *πλαγίανλος* is frequently mentioned by Greek and Roman writers. According to Pollux¹ IV. 74, it was invented by the Libyans, and was made of lotus wood; according to Pliny, VII. 204, it was invented by Midas in Phrygia. A passage in Apuleius, Met. XI. 9, shows that the instrument was held horizontally, exactly as the modern flute is held: *calamus obliquus ad aurem porrectus dexteram*, a fact which might have been inferred from the adjectives *πλάγιος* and *obliquus* which are used to describe it.

Instruments of the *πλαγίανλος*-type are extremely rare in works of art, and, wherever they are represented, the entire instrument is, with very few exceptions, a restoration, and therefore of no value in determining the actual appearance of the ancient instrument.² Works of art in which there has been no restoration show at least two, and probably three, varieties of the instrument. A wall-painting from Pompeii³ and a little gold ornament⁴ from a tomb in Russia repre-

¹ Cf. Athenaeus IV. 78.

² The *πλαγίανλος* is represented on two reliefs in the Louvre, Fröhner, Nos. 88, 373, and in the hands of a little terra-cotta figure, cf. Heuzey, *Les figurines*, etc., pl. 136; also in a wall-painting, Helbig, *Wandgemälde*, No. 760. It has been partially restored on a sarcophagus in the Vatican, cf. Mus. Pio Clem. V. 13, and on a Herma of the British Mus., cf. *Anc. Marb.* II. 36, but in both of these cases enough of the instrument is preserved to make the restoration certain. All of these representations I have seen except the one in the B. M., and of that I have seen a cast. I give also a few of the restorations: Louvre, Fröhner, Nos. 262, 263; Berlin, *Ant. Skulpturen*, No. 260, 261; Rome, Vatican, Helbig's *Führer*, No. 19 (36 A).

³ Helbig, *Wandgemälde*, No. 760, Zahn III. 31, Mus. Bor. XV. 18.

⁴ *Compte Rendu*, 1867, p. 45, atlas, pl. 6.

sent musicians performing on an instrument held horizontally in front of the mouth of the performer exactly as the modern flute is held. The instrument in the painting is a straight tube with flaring ends, that in the little ornament is a simple bar of gold, bent, at present, at the end farthest from the mouth, although, as we are informed in the account of it, the bar was probably originally straight. Neither of these instruments shows holes either for the fingers or for the mouth, but the fingers, in both cases, rest on the tube as though they were intended to cover holes in it. In modern instruments of this character the end nearest the mouth-piece is stopped with a cork, and this was probably true of the ancient instrument, in which case it would correspond exactly with the modern flute; but as no instrument of this character dating from ancient times has yet been discovered, it is, of course, impossible to decide this point except by inference.

A second form of this instrument is represented in a relief on a *puteal*¹ in the Louvre, and by a terra-cotta figure,² also in the Louvre. In both of these representations the performer is blowing, not across a hole in the side of his instrument, but across the open end of the tube. The tube is held horizontally, or nearly so, and the hands occupy the same position as on the modern flute, although in neither of these instruments is there any trace of finger-holes. One might be tempted to think that the artist, from carelessness or ignorance, had represented inaccurately the manner in which the instrument was held, were it not for the fact that on Egyptian monuments the transverse pipe is always³ represented as being held in this way. The *πλαγίαιλος*, as we are informed by Pollux and Athenaeus (cf. page 14), was invented by the Libyans, and if this statement is true, there is sufficient reason for believing that these two works of art represent accurately the way in which the pipe was sometimes held. The Arabs of to-day perform in the manner described⁴ on a simple

¹ Fröhner, No. 88; cf. Clarac, pl. 130, 139, n. 141.

² Heuzey, *Les figurines*, etc., p. 136.

³ Loret, p. 209. La flûte oblique était un simple tube ouvert aux deux bouts, dans lequel on soufflait en biais. Jamais, en effet, on n'a trouvé de flûte munie d'une ouverture latérale semblable à celle par laquelle on souffle dans nos flûtes modernes; jamais non plus, dans les bas-reliefs, la flûte oblique n'est représentée dépassant légèrement la bouche de l'instrumentiste.

⁴ Loret, p. 219.

pipe of reed provided with finger-holes and open at both ends, and by careful experiment the reader can convince himself that it is possible in this way to produce not only the fundamental tones of a pipe, but also the harmonics.¹ Instruments belonging to either of these varieties would have the acoustic properties of the open pipe, and with six finger-holes would give the complete diatonic scale through at least two octaves: they might properly be called flutes.

What has been described as probably a third form of the *πλαγί-αυλος* differs from the other two varieties in that it has a mouth-piece inserted, not into the end, but into a hole in the side of the instrument near the upper end, which is closed. Instruments of this type are represented on a sarcophagus² in the Vatican and by a *Herma*³ in the British Museum, and although in the second of these representations the instrument, with the exception of the mouth-piece, is a restoration, there can be no doubt that the instrument has been properly restored. In both of these cases the mouth-piece consists apparently of a short tube, and was perhaps a reed, like the reed of an oboe or of a clarinet, for in the *Herma*, which I have seen only in a cast, the mouth-piece seems to have been held between the lips. There seems to be authority for such an inference in Aristotle's *de animalibus* p. 801 b, ὅθεν δὲ ἐστὶ καὶ τῶν αὐλῶν· τὰ γὰρ ἔχοντα τῶν δυνάμεων τὰς γλίσσους πλαγίως, μιλιωτέρων μὲν ἀποδίδουσι τὴν φωνήν, οὐχ ὁμοίως δὲ λαμπράν, where *γλίσσαι πλαγίως* could very well refer to a mouth-piece extending obliquely from the instrument in the manner described above.

There are, further, in the British Museum⁴ two instruments which were possibly intended to be used as a pair, although in their present form it would be impossible to play on them both at once. One of these pipes is closed at the upper end, and although the corresponding end of the second pipe is now broken, it was undoubtedly originally closed as in the first instrument. Near this closed end there is on each pipe the raised bust of a Maenad, above the forehead of

¹ This is by no means an easy operation, and Lorey, p. 219, says that his experiments were entirely unsuccessful. It was only after many failures that I succeeded in producing clear tones. The instrument used was a joint of bamboo with an internal diameter of 1 cm. and a length of about 30 cm.

² Mus. Pio Clem. V. 13.

³ Anc. Mach. II. 36.

⁴ Quoted by Porphyrius ad Procl., p. 249.

⁵ Cat. Nos. 84, 4-9, 5 and 6.

which a hole is bored obliquely into the main tube, the slant of the hole being toward the lower open end of the instrument. One of these pipes has six finger-holes, the other five, and there are lines around the pipes between the finger-holes which indicate the points of meeting of bands such as were found on the Pompeian instruments. The hole above the head of the Maenad is evidently intended for the reception of the mouth-piece ; the fact that it is bored obliquely clearly shows that it was not itself the mouth-piece, but that the latter was inserted into it. The arrangement of bands and finger-holes differs slightly in these two instruments, so that the scale of both cannot have been exactly the same ; but the resemblance between them in size and in appearance seems to indicate that, in spite of the slight difference in scale, they were used as a pair. The presence of bands on instruments with so few finger-holes is a further indication that they formed a pair, for on a single pipe the fingers of both hands could be used to close the holes, and on such an instrument, with but six holes, the bands would be an encumbrance rather than a help, unless, as is hardly conceivable, they were immovable and were intended merely as a kind of ornament.

Without some additional form of mouth-piece the two instruments cannot have formed a pair, since it would be impossible to perform on both of them at once in their present state. It would, of course, be possible to insert into each of these pipes such an S-shaped tube as is used on the bassoon of the modern orchestra, and thus to perform on both of the instruments at the same time, but there is nothing in the literature or in the works of art to indicate that mouth-pieces of this description were ever used with pairs of pipes. On the other hand, the two works of art which have been mentioned do show a form of *πλαγίανλος* with a mouth-piece inserted into the side of the tube ; and, in the absence of any evidence showing that a similar form of mouth-piece was ever used on the double pipe, I am inclined to think that these instruments from the British Museum were used as single pipes, and belong to the type of *πλαγίανλος* shown in these two works of art.

By far the greater number of representations of the *αὐλός* show the performer blowing directly into the end of the pipe or pipes, which are held in front of him, pointing downward like the clarinet or oboe ; and, with very few exceptions, the works of art show pairs of pipes and not the single instrument.

The single pipe is, however, represented in works of art and is mentioned in the literature, so that it would be impossible to deny the existence of such an instrument. In works of art it is represented as a straight tube, and in the Pompeian wall-painting, Helbig, 767, it is provided with a bell like the bell of the modern clarinet or oboe. The mouth-piece, of which a fuller description will be given later, has occasionally the appearance of an oboe-reed.¹ The single pipe was undoubtedly in most cases a reed-instrument, and was then constructed exactly like one of the pipes of a pair, but there is occasional mention of a single pipe which may possibly not have been a reed-instrument.

The reasons for believing that such an instrument existed are as follows: Athenaeus, IV. 82, in speaking of the inventors of the various musical instruments, says: Μητροδώρος δ' ὁ Χίος ἐν Τρωικοῖς σύριγγα μὲν φησιν εὐρεῖν Μαρσίαν καὶ αὐλὸν ἐν Κελαιναῖς, τῶν πρότερον ἐνὶ καλάμῳ συριζόντων. Εὐφορίων δ' ὁ ἐποποιὸς ἐν τῷ περὶ μελοποιῶν τὴν μὲν μονοκάλαμον σύριγγα Ἑρμῆν εὐρεῖν, τινὰς δ' ἱστορεῖν Σεύθην καὶ Ῥωνάκην τοὺς Μήδους, τὴν δὲ πολυκάλαμον Σεληνὸν, Μαρσίαν δὲ τὴν κηρόδετον.² A distinction is here made between the *σύριγξ μονοκάλαμος* and the *σύριγξ πολυκάλαμος*, and the fact that the name *σύριγξ* is used for both clearly points to some resemblance between them. The *σύριγξ πολυκάλαμος* is the ordinary pan's-pipe, in using which the performer simply blew across the open ends of the tubes, which were held vertically in front of the mouth. The tubes of the pan's-pipe were ordinarily simple joints of reed, and it is clear from a passage in Porphyrius (ed. Wallis, p. 237) that they were not always closed at the bottom,³ and that when they were not closed, two different tones could be produced on each tube, one when the tube was open at both ends, and the second when the lower end was stopped by the finger of the performer. It is but a step from such an instrument as this to a single tube open at both ends and provided with finger-holes, and the new instrument could appropriately be called

¹ Mus. Borb. XVI. 3, cf. Baumeister, fig. 595.

² Perhaps Plin. N. H. VII. 204 was copied from this same source, *fistulam et monaulum Pan Mercuri (inuenit)*, and we should read *fistulam monaulum* = *σύριγξ μονοκάλαμος*.

³ In the Museum für Völkerkunde in Berlin, I remember having seen, in the collection from Bolivia, a pan's-pipe in which the tubes were open at both ends.

α σὺριγξ μονοκάλαμος. The σὺριγξ, mentioned near the beginning of Aristotle's problem XIX. 23 (quoted on p. 3), was probably a σὺριγξ μονοκάλαμος. How many finger-holes this instrument had is not stated; it certainly had one in the middle of the tube, and the note produced when this hole was open was an octave above the note produced when it was closed.¹ That such an instrument belongs among the αὐλοί has been seen in the case of the πλαγίαυλος, and furthermore Pollux, IV. 69, twice calls the tubes of the pan's-pipe αὐλοί. It is possible on such an instrument, provided with six finger-holes, to produce a continuous scale through two octaves; the instrument having the acoustic properties of the open pipe. The scholion to Pindar, Pyth. XII. 1, favors this explanation, and the wonderful accomplishment of Midas of Agrigentum can be easily explained; for, after the reeds of the pipes were broken, he blew on the pipes alone τρόπῃ σὺριγγος, simply holding them vertically before his mouth and blowing across the open ends of them. The difficulty would consist simply in the necessity of blowing on both of them at once.²

¹ This instrument cannot be the same as the σὺριγξ mentioned later in this same passage of Aristotle, and in which the tubes were either stopped at the end or partially filled with wax, for if such an instrument had a hole in the middle of one of its tubes, the note when the hole was open would be not one but two octaves above the note produced with the hole closed. With the hole closed the instrument is a stopped pipe, but with the hole open it is an open pipe, one half as long as the original stopped pipe, and would therefore give as its note the double octave.

The use of the same word σὺριγξ with two different meanings within so short a space can be easily explained. In illustrating the ratio of the note to its octave (2:1), the writer began with the string of a musical instrument which, if plucked so as to resound through half its length, gives the octave of the note produced by the whole string. Applying this same principle to the other instruments he shows that on the σὺριγξ μονοκάλαμος the octave is produced by boring a hole in the middle of the tube, and in the same way also in the αὐλός; but in the σὺριγξ πολυκάλαμος, in which the tubes are stopped pipes without finger-holes, the octave is produced by filling the tube half full of wax.

² Gevaert, Hist. de la Musique, II. p. 275, explains the σὺριγξ μονοκάλαμος as an instrument with a flageolet mouth-piece like that of the ordinary whistle, and says that these instruments occur no less frequently in works of art than does the pan's-pipe. I cannot, however, admit that this proves the existence of a flageolet in ancient times; for after a careful examination of all such instruments which I could find in Naples, Rome, and Paris, I am thoroughly convinced that in every case the instrument is a restoration and of no value in determining this question.

The σίρυξ *psoudalos* was also called ἱρυξ (cf. *Etym. Mag.* s.v. ἱρυξ, Bekker, *Anecdota Graeca*, I. 265), and if it received this name from the fact that its note resembled the note of the bird, it must have been a pipe of high pitch.

DOUBLE PIPES.

Egyptian reliefs and paintings, even the oldest of them, most frequently show performances on the double pipe. Assyrian¹ reliefs, with no exception, show the double pipe, and with very few exceptions the same is true of Greek and Roman works of art. These Greek and Roman representations are very numerous. Especially is this true of vase-paintings, of which several hundred could easily be catalogued; and yet in nearly every instance the double pipe is shown. In the literature the mention of the double pipe is equally predominant; the words αἰλαί and ἰβιαί are regularly used in the plural. The natural inference from this evidence is that the musician usually performed on a pair of pipes.

Gevaert, *Histoire de la musique*, Vol. II., p. 285, asserts that the great artists, Olympos, Sacadas, and Pronomos, played only on the single pipe and that this was the instrument used by the virtuosi at the Delphic contests. The evidence tending directly to disprove both of these statements is, however, of the most convincing character. In the scholia to Pindar, Pyth. XII. 1, we are told that Midas of Agrigentum, who won the prize at two Delphic contests, once had the misfortune, in the midst of a contest, to break the mouth-pieces of his instruments, but that he continued his performance *μόνους τοῖς καλάμοις τρώπῃ σίρυγγος* and won the contest. It is to be noticed that this contest took place at Delphi, and that the pipes are mentioned in the plural. In the 48th Olympic² contest Sacadas the Argive won *ἐπὶ τοῖς αἰλοῖς*, where again the plural is used. Pausanias

This is distinctly the case in Paris, where the restorations are conscientiously stated in the catalogues, and in Naples and Rome every such instrument is either restored or broken. It is interesting to note that in Wilkinson's *Manners and Customs of the Egyptians*, Vol. II. pl. 183, there is represented from a relief in Thebes, a musician performing this very feat attributed to Midas. I cannot, however, vouch for the trustworthiness of this representation, not having seen the original.

¹ Rawlinson, *Ancient Monarchies*, Vol. I., p. 533.

² Pausanias, X. 7. 4.

also describes a statue of Sacadas¹ holding pipes (again the plural) which were fully as long as the body of the musician. As for Pronomus, the passage from Pausanias which has already been quoted (p. 6) shows conclusively that he, too, used the double pipe, and the fact is further attested by Athenaeus, XIV. 31, *διόπερ ἦσαν ἴδιοι καθ' ἑκάστην ἁρμονίαν αὐλοὶ καὶ ἑκάστοις αὐλητῶν ὑπῆρχον αὐλοὶ ἑκάστη ἁρμονίᾳ πρόσφοροι ἐν τοῖς ἀγῶσι. Πρόνομος δ' ὁ Θηβαῖος πρῶτος ἤλυσεν ἀπὸ τῶν αὐτῶν [αὐλῶν] πάσας ἁρμονίας.* The following passage from Lucian implies that the musicians Timotheus and Ismenias also made use of the double pipe (adv. Ind. 5) *εἴ τις αὐλεῖν μὴ ἐπιστάμενος κτήσεται τοὺς Τιμοθέου αὐλοὺς ἢ τοὺς Ἰσμενίου, οὓς ἑπτὰ ταλάντων ὁ Ἰσμήνιος ἐν Κορίνθῳ ἐπρίατο, ἀρ' ἂν διὰ τοῦτο καὶ αὐλεῖν δύναιτο;* Even the vase-paintings² in which the musician is represented wearing a wreath, evidently as a token of victory, show him performing on a pair of pipes and not on the single pipe. There is no lack of further evidence on this point, but enough has already been said to show conclusively that the double pipe was used at the various musical contests and by the chief musicians of antiquity.

REEDS.

In the overwhelming majority of cases, the αὐλός must have been a reed-instrument. Aeschines³ says distinctly that if the reeds (γλῶτται) of the pipes are taken away, what remains is useless. Aristotle⁴ describes the eggs of the skate and of the dog-fish by saying that they resemble the γλῶτται of pipes, mentioning, of course, something perfectly familiar to his readers. Theophrastus,⁵ in describing the κάλαμος αὐλητικός, assumes that the γλῶτται are a regular feature of the pipe. The word ἐξηυλημένος⁶ in its colloquial meaning, "worthless," "played out," acquires this meaning from the fact that the worn-out reeds of pipes were thus designated.

Two types of reed-instruments are known to modern times, — the clarinet-type with a tube of cylindrical bore, and the oboe-type with a tube of conical bore. The mouth-piece of the clarinet has a rectangular opening in the side, over which a thin wedge of reed is

¹ Pausanias, IX. 30. 2.

³ Aesch. contra Ctes. 229, Bekker.

² Mon. dell' Inst. V. 10.

⁴ Aristot. Hist. an. p. 565 a 22.

⁵ Theophrastus, Hist. Plant. IV. 11.

⁶ Aristophanes, Achar. 681, schol.; cf. Etym. Mag., s.v. ἐξηυλημένος.

bound in such a manner as to leave the thinner end free, so that when caused to vibrate by the breath of the performer it alternately closes and opens the aperture in the mouth-piece.

The mouth-piece of the oboe is composed of two thin strips of reed which are bound firmly around a small conical tube, so that the ends of the strips project beyond the smaller end of the tube and flatten against each other, thus forming the apex of the cone. A reed of the oboe-type can be easily made of straw by splitting the straw for a short distance, and pressing the two halves together at the end.

There is a marked difference between instruments of these two types, those of the oboe-type having the acoustic properties of the open pipe, while those of the clarinet-type have the acoustic properties of the stopped pipe. This difference is caused by the bore of the instrument, and not by the form of mouth-piece employed; for the instrument invented by Adolph Sax, and known as the Saxophone, which is of conical bore and on which the tone is produced by means of a clarinet mouth-piece, has the acoustic properties of the open pipe, and the experiments with pipes of cylindrical bore described later in this article show that with either form of mouth-piece the cylindrical tube has the acoustic properties of the stopped pipe.¹ All Greek and Roman instruments, and all fragments of such instruments which have as yet been found, are of cylindrical bore, and have, therefore, assuming that they are reed-instruments, the acoustic properties of stopped pipes. Furthermore the statement of Aristotle as to the position of the finger-holes of the αὐλός (cf. p. 3 sq.) applies only to pipes of cylindrical bore.

In works of art the pipes are occasionally so represented that it seems absolutely necessary to assume that the bore must have been conical, and this is especially apparent in a relief of which a photographic reproduction is shown in the *Bulletino Comunale*, 1880, Pl. VII.-VIII. Until, however, some instrument or fragment of an instrument is discovered which settles this question in the affirmative, it is only possible to say that the ancients may have had instruments of conical bore. Even the pipes found in Egypt must be regarded as cylindrical tubes, for they have only the natural taper

¹ Friedrich Zamminer, *Die Musik und die musikalischen Instrumente*, Giessen, 1855, p. 305, confirms this statement.

of the material (reed) out of which they are constructed, and this is very insignificant.

It does not, however, follow that the mouth-piece was always a clarinet mouth-piece, as has been assumed in all of the experiments hitherto conducted with pipes made in imitation of those found at Pompeii, and as is implied by von Jan¹ in his description of the αὐλός; in fact, there is fully as much evidence in favor of the oboe mouth-piece as there is in favor of the clarinet mouth-piece.

The split straw is the simplest possible form of oboe mouth-piece, and was certainly used as a reed by the ancient Egyptians. Loret (p. 207) says that in the case in which were found all of the Egyptian pipes now in the museum at Leyden was found also a number of short pieces of straw, and on p. 209 that two pipes, one in the British Museum and one in the museum at Turin, still have such a piece of straw inserted into the end as a mouth-piece.² The straw is in each case inserted into the smaller end of the pipe, although in neither case is the difference in diameter of the two ends more than one millimeter.

Vergil³ and Tibullus⁴ several times speak of the performer on the *auena*, or oat-straw, and, in view of this evidence from Egypt, it must not be rashly assumed that they are speaking figuratively. A reed of such simple construction may very well have been used by the shepherds on their pipes.

Theophrastus, Hist. Plant. IV. 11, describes at length the plant *κάλαμος*, from which the pipe and its mouth-piece were made, but unfortunately he does not tell exactly how the mouth-piece was made. After having been properly seasoned, the *κάλαμος* was cut into pieces corresponding to the joints of the plant, and on each piece the joint nearest the top was left. These pieces were not less than two palms in length, and the pieces from the middle of the stalk were considered the best for the mouth-pieces, *ζεύγη*. The mouth-pieces for both of the pipes of a pair were made from the same joint, for if not so made the reeds, we are told, would not sound in harmony. These joints were next cut in two, and the por-

¹ Baumeister, Denkm., p. 553; cf. Gevaert, II. p. 282.

² Cf. Wilkinson, Ancient Egyptians, Vol. II., p. 308.

³ Vergil, Ecl. I. 2, X. 51, and the spurious lines at the beginning of the Aeneid.

⁴ Tibullus, II. 1. 53, III. 4. 71.

tion toward the root was used as the mouth-piece for the left-hand pipe, the other for the right-hand pipe; the *στόμα* (doubtless the end taken into the mouth) was in each mouth-piece at the point where the joint had been cut apart, and here, again, if this course was not followed, the reeds would not sound in harmony. Further than this Theophrastus does not go in describing how the mouth-piece was made, and whatever more is to be learned about these mouth-pieces must be learned by experiment. One of the pieces, as left by the description, is a simple tube of cane, open at both ends and about a palm in length: the other piece is of the same length, but stopped at one end by the joint of the cane. This stopped end is, however, to be inserted into the instrument, and consequently a hole must be bored through the joint to allow the air to pass through it. It is then possible either to split the tube and, after scraping the ends to be held in the mouth until they are very thin, to bind the two pieces together so as to make a reed like that of the modern bassoon, which is an instrument of the oboe-type; or by stopping the end to be taken into the mouth, making a rectangular opening in the side of the tube near this end, and binding over it a reed, as in the clarinet mouth-piece, to produce an instrument of the clarinet-type. The first of these methods is the simpler, and it is exactly in this way that the reed of the bassoon is made. Such a mouth-piece would, furthermore, be the most natural development from the primitive mouth-piece of straw. Too much stress must not be laid upon works of art, but in some of these the mouth-piece is so represented that one is almost compelled to believe that the artist had in mind this form of reed. This is especially true of a vase painting reproduced in the *Mon. dell' Inst.* XI. 27, and of the single pipe in the Pompeian wall-painting, Zahn, III. 43, to which reference has already been made. There is, moreover, nothing in the passage from Theophrastus inconsistent with this view, and one or two expressions used by this author in stating the best time for harvesting the *καλαμος* are best explained by assuming that the reeds were of the oboe-type. These expressions are found in the following passage, which for the sake of clearness is given in full: *Hist. Plant.* IV. 11. 4. *τὴν δὲ τομὴν αἰρεῖται εἶναι πρὸ Ἀπριλίου μὲν ἥνικ' ἤλθον ἀπλάστως ὑπ' ἀκτουσαν Βοηδρομιώνος μηνός· τὸν γὰρ οὕτω τμηθέντα σιγυῖς μὲν ἔτεται ὑστερον γίνεσθαι χρησιμῶς καὶ προκαταυλίσσεως θεῖσθαι πολλὰς συμμεῖων δὲ τὸ*

στόμα τῶν γλωττῶν, ὃ πρὸς τὴν διατορίαν εἶναι χρήσιμον. ἐπεὶ δὲ εἰς τὴν πλάσιν μετέβησαν καὶ ἡ τομὴ μετεκινήθη· τέμνονσι γὰρ δὴ νῦν τοῦ Σκιρροφοριῶνος καὶ Ἑκατομβαιῶνος ὥσπερ πρὸ τροπῶν μικρὸν ἢ ὑπὸ τρόπας, γίνεσθαι δὲ φασὶ τρίενόν τε χρήσιμον καὶ καταυλήσεως βραχείας δεῖσθαι καὶ κατασπάσματα τὰς γλώττας ἴσχειν· τοῦτο δὲ ἀναγκαῖον τοῖς μετὰ πλάσματος αὐλοῦσι. Pliny, N. H. XVI. 171, who attempts to translate this passage, translates συμμύνειν δὲ τὸ στόμα, etc., *comprimētibz se lingulis*, and κατασπάσματα τὰς γλώττας ἴσχειν, *apertioribus earum lingulis ad sonos flectendos*. It is difficult to see what these words can mean if applied to the mouth-piece of a clarinet, but if applied to that of the oboe they might mean that when the tube was split to make the reed, if the material had been cut at the proper season of the year, the two halves of the reed, when flattened against each other by pressure, retained this shape and did not have a tendency to curl up into their original form,—a tendency which is expressed in Pliny by the words *apertioribus earum lingulis ad sonos flectendos*, since if the reeds curled they would separate in the middle. Even the name ζεύγος as applied to the mouth-piece seems to imply reeds of the oboe-type. This word naturally means a pair of like things and would here mean, when used in the singular, a pair of similar reeds united into a mouth-piece. The plural ζεύγη would then mean the two mouth-pieces of a pair of pipes. It is not easy to see what ζεύγος could mean if applied to a clarinet mouth-piece. It is further to be noted that the clarinet has but one reed, while here Theophrastus uses the plural, τὸ στόμα τῶν γλωττῶν.

Since the discovery of four ancient instruments at Pompeii in 1867, experiments with tubes made in imitation of them have been conducted by Kraus in Florence and by Gevaert in Brussels, with a view to determining the scales of these instruments. These experiments seem, however, to have been made in every instance on the assumption that with instruments of cylindrical bore it was necessary to make use of the clarinet mouth-piece.¹ The exact form of mouth-piece used in the experiments at Brussels and Florence on the facsimiles of Pompeian pipes, is described at length by von Jan in

¹ Baumeister, Denkm., p. 553; Gevaert, Hist. de la musique, II. 280. The clarinet type of mouth-piece is used to-day by the Arabs (cf. Baumeister, p. 554; Loret, p. 234 sq.), who perform on an instrument corresponding in many respects to the double-pipe of antiquity, and it is possibly a survival of a very ancient usage.

Baumeister's Denkmäler, p. 554. This form of mouth-piece certainly does give a fuller and clearer tone than the reed of the oboe-type; but, as has already been stated, the form of mouth-piece has no effect on the harmonics of the pipe, and with the Pompeian instruments the scale is exactly the same, no matter which form of reed is used. The works of art give very insufficient material from which to decide this question, and it is, of course, possible that both forms of mouth-piece were used.

The reeds were taken directly into the mouth, and were not enclosed in an air-chamber, as is shown by the following passage from Aristotle¹ (de audib. p. 802 b, 18): *δεῖ γὰρ καὶ τῶν αὐλῶν εἶναι τὰς γλῶττας πυκνὰς καὶ λείας καὶ ὁμαλὰς, ὅπως ἂν καὶ τὸ πνεῦμα διαπορεύηται δι' αὐτῶν λεῖον καὶ ὁμαλὸν καὶ μὴ διεσπασμένον. διὸ καὶ τὰ βεβρεγμένα τῶν ζευγῶν, καὶ τὰ πεπωκότα τὸ σιάλον, εὐφωνότερα γίνονται· τὰ δὲ ξηρὰ κακόφωνα· ὁ γὰρ ἀὴρ διὰ ὑγροῦ καὶ λείου φέρεται μαλακὸς καὶ ὁμαλός.* The following passages show further that the entire mouth-piece was not taken into the mouth so that the reed swung perfectly free in the mouth of the performer, but that the reed or reeds were held between the teeth or lips of the performer, so that he could use them to govern the tones produced on his instrument. Aristotle de audib. p. 804 a (cf. Porphyrius, p. 252) *καὶ γὰρ ἂν πίεση τις τὰ ζεύγη, μᾶλλον ὀξύτερα ἢ φωνὴ γίγνεται καὶ λεπτοτέρα*; Porphyrius, p. 249, *ἐν δὲ ταῖς συγκροτέραις γλώσσαις, ἢ φωνὴ γίγνεται σκληροτέρα καὶ λαμπροτέρα, ἂν πίεση τις αὐτὰς μᾶλλον τοῖς χεῖλεσι*; and Festus (ed. Müller, p. 116) s.v. *lingula*—*alias insertae, id est intra dentes coercitae ut in tibiis.*

This control of the reeds exercised by the lips is one of the principal means for correcting the pitch of the pipe to which reference has already been made, and these passages show clearly that this device was well known to the ancient musicians.

The entire mouth-piece, including the reeds, seems, from the various passages quoted, to have been called the *ζεύγος*; but as the important part of it was the reeds, the name *γλῶττα* was often used to designate the entire mouth-piece, as is shown by the use of this word and by the fact that the mouth-piece, which fitted into a socket in the end of the tube and which could be detached from the instrument, when not in use was kept in a little case called the *γλωττοκο-*

¹ Quoted also by Porphyrius, p. 250.

μαίον.¹ Such a case for mouth-pieces is shown in a number of vase-paintings,² and appears to have been simply a small bag.

Where two pipes were employed at the same time, each had a separate mouth-piece, as is distinctly shown in every³ work of art which has been preserved to our time. This statement is confirmed by the Egyptian and Assyrian works of art, for in them the instruments are never represented as uniting in a single mouth-piece.

In addition to this, experiments which I have made with pairs of pipes of various sizes united by a single mouth-piece, into which could be fitted reeds of both the types described above, made it very apparent that the pipes were not intended for use in this manner. With either form of reed the pipes cannot be made to sound independently, and they admit of the production of but one tone at a time. If the open end of either pipe is closed, a note an octave lower than before is produced, which would seem to indicate that such an instrument was acoustically an open pipe. The harmonics of the instrument, however, when both pipes are open, are those of the stopped pipe. That the pipes do influence each other is shown by the fact that, although with pipes of equal length the resultant note is the note which either pipe alone would give, with unequal pipes the resultant is not the fundamental note of either pipe but the average of the notes of both. I further observed that the angle which the two pipes made with each other had absolutely no influence on the pitch of the tone.

These experiments were made both with pipes of the same length and with pipes of different lengths, and the result was always the same. With pipes of unequal length the result is by no means surprising; for, theoretically, it seems impossible that a single reed should be able so to vibrate as to produce different tones on two pipes at the same time. In the light of these experiments, there-

¹ Pollux, II. 108, VII. 153, X. 153-4.

² Baumeister, Denkm., p. 554, Fig. 591.

³ In Bartholinus, de tibiis veterum, pp. 51, 52, there are two engravings which represent pairs of pipes, each pair uniting in a single mouth-piece. The first is a reproduction from J. J. Boissard, *Antiquitates Romanae*, in which a sacrifice to Priapus is represented; the second is from J. P. Bellori, *Admiranda Rom. antiq. vestigia*, pl. 47, in which is shown a female figure playing on a pair of curved pipes. I have sought diligently for the original reliefs from which these engravings were made, but have never been able to find them, nor have I ever seen in an ancient work of art two curved pipes in the hands of a musician.

fore, it is safe to say that the two pipes were never made to sound with the same reed, and that, if they were ever united by a single mouth-piece, the mouth-piece must be regarded simply as an air-chamber, within which each pipe had its own reed.

ΟΑΜΟΣ, ΥΦΟΑΜΙΟΝ.

There are two portions of the instrument, near the mouth-piece, for which names have been preserved,—the *ὄλμος*¹ and the *ὑφόλμιον*.² Two explanations of these parts of the instrument, neither of them entirely satisfactory, have been offered,—one by Gevaert, Vol. II., p. 285, in which the *ὄλμος* is described as the mouth-piece, the *ὑφόλμιον* as the upper part of the instrument, into which the *ὄλμος* was inserted; the other by von Jan, in the *Allgemeine musikalische Zeitung*, 1881, No. 31, in which the *ὄλμος* is described as the beak or mouth-piece of the clarinet-type, the *ὑφόλμιον* as the reed itself, which rested on the under lip of the performer, and was therefore under the *ὄλμος*. But there is absolutely no evidence that the *ὄλμος* was ever taken into the mouth of the performer, as would be required by either of these explanations, and a much simpler explanation than either of them is possible. The word *ὄλμος* signifies a mortar, or a peculiar shaped cup, and the word *ὑφόλμιον* signifies originally a support or stand for the *ὄλμος*; cf. Aristophanes, in Pollux, X. 114; Hesychius, s.v. The mortar and mortar-stand, as shown in a vase-painting,³ have a very striking resemblance to the upper end of the instruments from Pompeii (Pl. II.), and it is not improbable that these parts of the pipes received their names on account of this resemblance. According to this view, the *ὄλμος* is the pear-shaped bulb, and the *ὑφόλμιον* the flaring tube inserted into it.⁴ The bulb, or *ὄλμος*, is very frequently shown in works of art,⁵ and it is interest-

¹ Pollux, IV. 70.

² Pollux, IV. 70; Hesych. s.v. μέρος τι τοῦ αὐλοῦ πρὸς τῷ στόματι, ἢ αἱ γλωττίδες. καὶ ὑπόθεμά τι. For ἡ Aug. Wagener reads ἡ. Ptol. Harm. I. 3, p. 7, ed. Wallis.

³ Jahn, Bericht. der Sächs. Acad., 1867, taf. 1. 4; cf. Schreiber, Bilderatlas, taf. LXVII., Fig. 3.

⁴ Von Jan, Baumeister's Denk., p. 556, suggests the possibility of some such explanation as is here offered.

⁵ Both *ὄλμος* and *ὑφόλμιον* are shown in a Pompeian wall-painting (Helbig, Wandgemälde, No. 114), and in a mosaic in the Museo Kircheriano; for the *ὄλμος*, cf. Mon. dell' Inst. VI. 18; H. d'Escamps Marbres du Musée Campana, pl. 25; Baumeister, fig. 598; etc.

ing to note that on the modern clarinet this part of the instrument has, in all countries, received its name from its resemblance to some familiar object, being called in America and in England the 'pear,' in Germany 'die Birne,' in France 'le baril,' etc.

The part which has been called the ὑφόλμιον is not always shown as a flaring tube, but is often represented as a cylindrical tube. It is evident from the statement of Hesychius, μέρος τι τοῦ αὐλοῦ πρὸς τῷ στόματι, that the ὑφόλμιον was near the mouth-piece of the instrument; but it is equally clear from the catalogue of the various parts of the αὐλός as given by Pollux, IV. 70, that it cannot be identical with the reed, for both of these parts are mentioned, and in such a way as to imply that they were not identical.

According to this view, Gevaert is correct in assuming that the ὑφόλμιον was the flaring tube into which the mouth-piece was inserted, but is incorrect in assuming that the ὀλμος was the mouth-piece.

ΦΟΡΒΕΙΑ.

In performing on the double-pipe a great deal of pressure was exerted by the breath on the cheeks and lips, and to relieve this pressure the performer made use of a bandage, passing over the mouth and cheeks and provided with holes through which the mouth-pieces of the instruments could be passed. Such a bandage is frequently shown in works of art, and was called by the Romans *capistrum*, by the Greeks φορβεία, περιστόμιον.¹ It is only with reed-instruments that the *capistrum* can have been used for the purposes here stated; with any other type of instrument the pressure of the breath would be very slight and the bandage would be an inconvenience rather than a help.

It has occurred to me that possibly this bandage was intended to serve still another purpose; that of holding the instruments to the mouth of the performer so that the hands might be left free to move up and down on the instruments, as would be necessary in turning the bands, and in opening and closing the finger-holes. Inasmuch as but one hand could be employed for each pipe, some such arrangement was highly desirable if not absolutely necessary and especially if the number of finger-holes was very great.

¹ Schol. Ar. Vesp. 580; Hesych., s.v.; Suidas, s.v.

A *capistrum* could easily be constructed in such a way that the mouth-pieces would fit tightly into it and support the instruments, leaving the hands absolutely free to move.

The instruments themselves, when not in use, were kept in a case called *συβήνη*.¹ Such cases are frequently shown in works of art, and regularly have a separate compartment for each tube. No Greek or Roman cases of this sort have ever been found, but two instrument-cases have been found in Egypt and are preserved, one in the Louvre at Paris, the other in Leyden (Loret, pp. 199 and 201).

HARMONICS.

There are very convincing proofs that the acoustic properties of the *αὐλός* were well known to the Greeks and Romans, and that they made use of the harmonic tones of their instruments in their music. In all vase-paintings and in many of their reliefs, the instruments are represented as tubes of small diameter in comparison with their length. The pipes represented in Egyptian works of art show this same peculiarity, and of the existing instruments described by Loret (p. 197 fg.) only one has a diameter so great as 1.8 cm. while with few exceptions the diameter is less than 0.6 cm. The four pipes found at Pompeii have an internal diameter of 0.95 cm. and the diameter of the Greek instruments in the British Museum is correspondingly small.

It seems clear, therefore, that these instruments were ordinarily of small diameter as compared with their length. Tubes of such dimensions facilitate the production of the harmonic series of tones (cf. Zamminer, *die Musik und die mus. Instr.*, p. 218), and the ancients very probably had this object in view in constructing their instruments with these dimensions.

Aristoxenus² gives the range of a single pipe as two octaves and a fifth, *τὸ διὰ πέντε καὶ τὸ δις διὰ πασῶν*, and this range for the diatonic scale alone would, without the use of harmonics, require eighteen finger-holes. Not only is this a larger number of finger-holes than is found on any instrument preserved to our time, but the difficulties of performing on such an instrument would be very great, on account of the fact that the holes nearest the mouth-piece would be very close

¹ Pollux, VII. 153, representations Mon. dell' Inst. XI. 27 et al.

² Aristoxenus, *Harm.*, ed. Marquard, p. 28.

together. Furthermore, Proclus, in his commentary to Plato's Alcibiades, chap. 68, says that from each hole of the pipe at least three tones could be produced, and that if the παρατρνήματα are opened, even more tones are possible. A possible explanation of the παρατρνήματα has already been given (p. 11); the important statement is that three tones can be produced from each hole, which can hardly be anything else than a reference to the harmonic tones of the pipe.

In view of all this evidence it is somewhat surprising to observe that Gevaert¹ and others are of the opinion that the ancients could not produce the harmonics on their instruments, and that even with the pipes found at Pompeii it would be impossible to produce more than one tone for each of the lateral holes. The inaccuracy of this statement can be shown by actual experiment; for with tubes made in exact imitation of the pipes from Pompeii, with the aid of either form of mouth-piece described above, I have produced three tones from each hole, as stated by Proclus.

The modern clarinet has a small hole near the mouth-piece, called the "speaker," which, when open, *facilitates* the production of the harmonics, but it is not absolutely essential to their production, as can be demonstrated by actual experiment. It is reasonably certain that such an arrangement also existed on the ancient instruments, as will appear later, but its absence would not be proof that the harmonics were not used by the ancients.

In three different passages² in Greek writers the statement is made that if the performer presses³ the ζεύγη or the γλῶτται of the pipes, a sharper tone is produced; and, although we have two different

¹ Gevaert, Hist. de la Musique, II. 285; von Jan, Baumeister, Denk., 556.

² Aristotle, de audib., p. 804 a; Porphyrius, ed. Wallis, p. 249; id. ib., p. 252.

³ K. von Jan, in Philologus, XXXVIII., p. 382, interprets the words ἀν πίεση τις τὰ ζεύγη as 'wahrscheinlich wenn man die Klappen öffnet.' In the other passages quoted it is, however, the γλῶτται which are operated upon, and in Porphyrius, p. 249, the words are ἀν πίεση τις αὐτὰς μᾶλλον τοῖς χαλκοῖς, which cannot possibly refer to opening the keys of the instrument, but must refer to pressure with the lips upon the reeds. It is therefore to be assumed that where the ζεύγη are mentioned, the same operation is described as in the other two instances, and that the word ζεύγη is simply a more comprehensive term, meaning mouth-pieces including the reeds. Moreover, it does not seem possible that either of these expressions can mean opening the keys of the instrument, for the keys, if we call the bands by that name, were not opened by pressure.

names for the part of the instrument on which the pressure is to be exerted, the actual operation in all of these cases was undoubtedly the same. By pressing with the lips or teeth on the reed of a clarinet¹ or oboe near the base of the reed, it is possible to produce the higher harmonics of the instrument, and this is in all probability what is meant by the passages quoted above.

Furthermore, with reedless instruments, such as the *εἰρηφῆ παυσί-
λαμος* and the *κλαρινέλος*, it seems impossible that the performer should not have discovered the existence of the harmonic tones; for on any instrument of this character a very slight additional effort to increase the power of the tone inevitably leads to the production of harmonic tones. It is, therefore, inconceivable that this phenomenon was not observed by the ancients.

THE STRICK

As has been said above, the modern clarinet has, near the mouth-piece, a small hole called the "speaker," which, when open, enables the performer to produce without effort the harmonic tones of the instrument. Although this device is not absolutely necessary, it is of the greatest assistance to the performer, especially in producing the first harmonics of the lowest tones.

There are a few passages in ancient writers which imply the existence of such an arrangement on the Greek and Roman instruments. Aristomenus (cf. *Metaphys.* p. 25) speaks of an attachment to the *αἰλίσ* which was called the *εἰρηφῆ*, and which, when in use, had the effect of raising the pitch of the instrument: his words are: καὶ ἀνορθώ-
σθαι τὰ ἐπὶ τῆς εἰρηφῆς ἢ τοῦ εὐκταύρου ἡρώδης τὰς τὴν τοῦ αἰλίσ-
του διατάξας καὶ ἐν ταῖς τοῦ ἡρώδης διατάξαις: that is to say that when this attachment was in use the range of the pipes was more than two octaves and a fifth.

Aristotle (*de mus.* p. 304 a) mentions this same attachment, and ascribes to it the same effect on the tone of the instrument: ὅτι καὶ τὸν ἀλφειὸν αὐτὸν ταυτῶν καὶ τὸν τελευτῶν αἰλίσ, καὶ μάλιστα οὗτος πληροῦς τὰς αἰτίας τοῦ εὐκταύρου. ὁμοίως δ' ἔστιν· καὶ γὰρ ἐν ταῖς τοῦ πᾶ ἁλφειῖ, αἰλίσ τοῦ εὐκταύρου ὁ ὁμοῦ ἡρώδης καὶ ἡρώδης. καὶ αὐτὸν πληροῦς τὰς τοῦ εὐκταύρου, καὶ ἐν ταῖς τοῦ εὐκταύρου ὁ ὁμοῦ ἡρώδης τὰς τοῦ εὐκταύρου καὶ τοῦ εὐκταύρου ὁμοῦ καὶ τοῦ εὐκταύρου ὁμοῦ.

¹ Cf. Zimmerman, *die Musik u. ihr Inst.* p. 300.

The effect produced by pressing with the lips on the reed, as has already been said, is to produce the harmonics of the pipe, and it is clear from this passage that the syrinx also served this purpose. Again, in Plutarch (*non posse suav.*, p. 1096 a) the syrinx is mentioned as a part of the αὐλός: διὰ τί τῶν ἴσων αὐλῶν ὁ στενώτερος βαρύτερον φθέγγεται· καὶ διὰ τί τῆς σύριγγος ἀνασπώμενης, πᾶσιν ὀξύνεται τοῖς φθόγγοις, κλινομένης δὲ πάλιν βαρύνει καὶ συναχθεῖς πρὸς τὸν ἕτερον, διαχθεῖς δὲ ὀξύτερον ἤχει. From this passage is derived the additional information that the syrinx affected all of the tones of the instrument, and although words of precisely opposite meanings, ἀνασπᾶν and κατασπᾶν, are used in these several passages to denote the method of employing the syrinx, the effect in all three cases was the same.

A little hole in the instrument, like the 'speaker' of the clarinet, would raise the tone of each hole to the harmonic 'overtones,' and such a hole could easily have been covered by a sliding band, which in some instruments was pushed up to open the hole, and in other cases pulled down for the same purpose,—a fact which would account for the difference in the use of the two words, ἀνασπᾶν and κατασπᾶν.¹

In the *Anecdota Graeca Oxoniensia*, Vol. II., p. 409, several definitions of the word σύριγξ are given, and one of them, σημαίνει τὴν ὀπὴν τῶν μουσικῶν αὐλῶν, shows that some hole of the αὐλός was actually called a syrinx.²

If the syrinx was such a device as has been described, light is thrown on a passage in Plutarch (*de mus.* 21), Αὐτίκα Τηλεφάνης ὁ Μεγαρικὸς οὕτως ἐπολέμησε ταῖς σύριγξιν, ὥστε τοὺς αὐλοποιούς οὐδ' ἐπιθεῖναι πώποτε εἶασεν ἐπὶ τοὺς αὐλοὺς, ἀλλὰ καὶ τοῦ Πυθικοῦ ἀγῶνος

¹ The words ἀνασπᾶν and κατασπᾶν in these passages undoubtedly both mean 'to put the syrinx in operation,' although the manner of doing it is expressed by words of exactly opposite meaning. It seems impossible, therefore, that von Jan (*Phil.* XXXVIII., p. 382) should be right in thinking that a joint at the lower end of the instrument, which could be detached, was called the syrinx, and his explanation, 'Der Theil also, auf welchem man nach Abnahme der Syrinx weiter blasen kann, heisst selbst Syrinx und das Blasen darauf *συρίττειν*,' certainly does violence to the passage of Aristoxenus which he quotes. It is far more probable that the syrinx was itself a part of the instrument which could be put into operation by one or the other of the actions implied in the verbs ἀνασπᾶν or κατασπᾶν, and that *συρίττειν* means simply to perform on the instrument when the syrinx is in operation.

² Cf. *Etym. Mag.* s.v. σύριγξ.

μάλιστα διὰ ταῦτ' ἀπέστη. It would seem, then, that this musician considered the addition of the 'speaker' to his pipes as detracting from the dignity of his art, by making it possible for a poorer performer to produce, with ease, the harmonic tones,—an art which before this innovation required great skill on the part of the performer. The objections of this ancient artist to innovations can be paralleled by the objections of modern artists to the Boehm mechanism on the flute.

There is, further, a passage in Quintilian (I. 11. 6) which may possibly refer to this same syrinx: 'ne illas quidem circa s litteram delicias hic magister feret, nec uerba in faucibus patietur audiri nec oris inanitate resonare nec, quod minime sermoni puro conueniat, simplicem uocis naturam pleniore quodam sono circumliniri, quod Graeci καταπεπλασμένον dicunt; sic appellatur cantus tibiæ, quæ præclusis, quibus clarescunt, foraminibus, recto modo exitu grauiorem spiritum reddunt.' If the *foramina quibus clarescunt* can be interpreted to mean the 'speakers,' or holes by means of which the pitch is raised (*i.e.* the harmonics produced), this passage gives additional reason for believing that the ancients were acquainted with this device. The effect of closing the holes would be to lower the pitch of the instrument by causing the node in the instrument to disappear, so that the fundamental tones would be produced (*recto modo exitu grauiorem spiritum reddunt*).

The instruments found at Pompeii lend support to the theory that the 'speaker' was known to the ancients. Two of these instruments (Nos. 76891 and 76892, see Pl. II. figs. 1 and 2) have narrow bands of silver encircling the tube near the mouth-piece, and on one of the instruments the band is supplied with the mechanism to enable the performer to turn it round on the tube.¹

The metal band of No. 76891 is badly oxidized, but even in the

¹ In view of the fact that von Jan, in Baumeister's Denkmäler, p. 261, says that not the slightest indication of such a 'speaker' is to be seen on any of the remains of ancient instruments, it seems proper to state that only in the case of the instrument No. 76892 is there any indication of a hole in the tube. The band, however, exists on both of the instruments mentioned, and can be seen in the original photographs of these instruments in my possession. Further than this, I have personally examined the instruments themselves and have measured them. I also inserted a pin into the hole in this instrument and convinced myself that the hole actually extended into the main tube of the instrument.

photographs of the instrument it is distinctly visible. The band of No. 76892 is very well preserved, and through it and into the tube of the instrument is a small hole, not larger than an ordinary sized pin. This hole is also visible in the photographs of the instrument; and even assuming that it is the result of accident rather than design, the fact that bands are found in this particular place on the instrument leads to the conclusion that there was a hole in the tube to be covered, and if so, what is more probable than that it was intended to be used as a 'speaker'?

KINDS OF DOUBLE PIPES.

In two passages¹ from Greek writers, which have already been quoted, the statement is made that, until the time of Pronomus, three different kinds of pipes were used for the three different scales, the Dorian, the Phrygian, and the Lydian, and that Pronomus improved the pipes so that all three of the scales could be played on the same pair of instruments.

This statement, however, must certainly not be interpreted as meaning that, from this time on, all instruments were of exactly the same length, for even after this improvement pipes of many different sizes were manufactured and used, as is shown by the statements of Greek and Roman writers, by the works of art, and by the instruments which have been preserved.

The Romans recognized two main classes of double pipes, which are thus described by Servius, ad Aen. IX. 615, 'tibiae aut Serranae dicuntur, quae sunt pares et aequales habent cauernas aut Phrygiae, quae et impares sunt et inaequales habent cauernas.' What follows in this *scholium* is directly attributed to Varro, and very possibly these words, too, are taken from the same source.

In works of art the double pipe is represented either as two straight pipes of equal length, or as two pipes of unequal length, in which case the longer pipe is always curved at the end farthest from the mouth, and terminates usually in a bell like the bell of a clarinet.

The curved pipe² is frequently mentioned in Roman writers, and

¹ Pausanias, IX. 12. 5; Athenaeus, XIV. 31.

² Tib. II. 1. 85, Phrygio tibia curua sono; Verg. Aen. XI. 737, curua choros indixit tibia Bacchi; Ov. Met. III. 533, adunco tibia cornu (cf. Met. IV. 392); Ov. ex P. I. 1. 39, ante deum Matrem cornu tibicen adunco; Ov. F. IV. 181, inflexo *Berecynthia* tibia cornu.

usually in such a manner as to imply that it was of Phrygian origin, and although such an instrument is not found in any distinctly Greek work of art, the use of the curved pipe in Greece can be proved from the literature. Hesychius, s.v. ἑκατέρωλης, mentions this instrument, and calls it the Phrygian¹ pipe: ὁ τοῖς Φρυγίοις αὐλῶν. ἔχει γὰρ ὁ ἑκαστέρος προσκείμενον κέρας, as does also Athenaeus, IV. 84, ἐν δὲ τῇ δευτέρῃ Φούκι ὁ αἰγὸς Ἰων φησιν "Ἐκτερον ἄγων βαρὺν αὐλὸν τρέχοντι ῥυθμῷ" οὕτω λέγων τῇ Φρυγίᾳ. βαρὺς γὰρ οὗτος· παρ' ὃ καὶ τὸ κέρας αὐτῷ προσάκτουσιν ἀναλογεῖν τῇ τῶν σαλπείγγων κύβαντι, and Pollux, IV. 74, Αὐλῶν δὲ αἰδη . . . ἑλμος τῇ μὲν ἔλῃ πεζυῖος, τὸ δ' εἶρημα Φρυγῶν. κέρας δ' ἑκατέρω² τῶν αὐλῶν ἀνανεῖον πρόσκειται, αὐλεῖ δὲ τῇ Φρυγίᾳ θεῶ.

¹ There is a passage in the scholia to Vergil, in which a different explanation of the curved pipe is given: Servius ad Aen. XI. 737, *hanc tibiam Graeci πλαγίαν αὐλὸν* uocant, *Latini nascam tibiam*. If, however, the *πλαγίαν* was a curved pipe, the explanation of it which has already been given (p. 14 sq.) is incorrect; for, with the exception of the little gold ornament there described, all representations of the transverse flute show perfectly straight tubes, and we are given to understand that the curve in this ornament was the result of accident. The very name of the instrument seems to indicate the manner in which it was held, and especially if we compare it with the Latin name *tibia obliqua*, which can scarcely mean anything else than transverse flute. Furthermore, both these names, *πλαγίαν* and *tibia obliqua*, are regularly used in the singular, as in Pollux, IV. 74, and in Pliny, N. H. VII. 204, *obliquam tibiam* Midas in Phrygia, (inuenit) *geminas tibias* Marsyas in eadem gente, and in such a manner as to indicate that the musician used only one of them at a time; while the curved pipe, although the name is used in the singular, is regularly represented in works of art as one of a pair, the other pipe being straight. It therefore seems fair to assume that the scholiast is mistaken in his statement, and that the curved pipe was really the Berecynthian horn which formed one of the pipes of the Phrygian pair, and particularly as this *scholium* is found only in the fuller commentary to Vergil first edited by Daniels, and is possibly of late origin. In only one other passage is there any mention of the *tibia nasca* (Solinus, 5. 19), and from this passage no further information can be gained.

² This is the most probable conjecture for the *ἑκατέρω τῶν αὐλῶν* of the Mss., although even this is inconsistent with the passages quoted from Hesychius and Athenaeus, in that it implies that both pipes of the pair were curved. I know of no ancient work of art in which both pipes are curved, although two old engravings, which claim to represent such works of art, do show both pipes curved. Both of these engravings are in P. S. Bartoli, *admiranda Rom. antiq. uestig.*, Pl. 17 and 47, and the latter is reproduced, with the figure turned from right to left, in Bartolinus, *de tibiis ueterum*, p. 52. In the original relief, however, from which the first engraving was made, one of the instruments is straight (cf. Helbig,

The natural inference from this evidence is that the *imparaes* were always Phrygian pipes, exactly as was stated by Servius, and, furthermore, that one of these pipes was always curved at the end.

Pollux, IV. 80, describes the γαμήλιον αὐλημα as two pipes, of which one was larger than the other; and if this statement is correct, these pipes, according to the theory here advanced, were Phrygian pipes. It is to be feared, however, that, as has been surmised by von Jan,¹ Pollux has here explained as a variety of instrument what was merely a form of composition for the instrument, for αὐλημα is the name, not of an instrument, but of a composition. A possible explanation, however, is that this particular form of composition was always played on the Phrygian pipes.

The regular name in Greek for the Phrygian pipes seems to have been αὐλοὶ ἔλυμοι, as is shown by Athenaeus, IV. 79, τοὺς γὰρ ἐλύμους αὐλοὺς . . . οὐκ ἄλλους τινὰς εἶναι ἀκούομεν ἢ τοὺς Φρυγίους, and by the passage already quoted from Pollux.

In the didascalies to the plays of Terence there is no mention of the Phrygian pipes, but according to this view, the *imparaes* which were used to accompany the Heautontimoroumenos and the Phormio were, nevertheless, Phrygian pipes.

In performing on the Phrygian pipes, according to Hesychius (s.v. ἐγκεραύλης), the curved pipe was held in the left hand; and although the works of art give no conclusive evidence on this point, the curved pipe being represented now in the right hand and now in the left of the performer, there are reasons for assuming that Hesychius is correct in his statement. The Egyptian monuments, although they do not represent the Phrygian curved pipe, do show pairs of straight pipes in which one of the pipes is longer than the other. In all these cases the longer pipe is held in the left hand of the performer (Loret, p. 139). Again, if, as is implied by Servius in the passage quoted, the *imparaes* were always Phrygian pipes, the didascalies to the plays of Terence support the statement of Hesychius; for, although two right-hand pipes are mentioned in these didascalies, a pair of left-hand pipes is never mentioned. It would seem, therefore, that the

Führer durch die öffentlichen Sammlungen Rom's, II., No. 805, note). The other engraving I have been unable to identify with any existing work of art in Rome. Possibly the author wrote ἐτέρω τῶν αὐλῶν.

¹ Baumeister, Denkm., p. 563.

musician never changed the instrument which he held in his right hand, but that, when the character of the music changed, he changed the pipe held in his left hand. Furthermore, Varro, as quoted by Servius, Aen. IX. 615, *tibia Phrygia dextra unum foramen habet, sinistra duo, quorum unum acutum sonum habet, alterum grauem*, implies that the left Phrygian pipe produced the lower tone, and, as the curved pipe is always longer than the straight one in the representations, it would of course produce the lower tone; and therefore, if Varro's statement is correct, the curved pipe was held in the left hand.

Theophrastus, H. p., IV. 11. 7, says that of the two mouth-pieces which are to be made from the same joint of the reed, the one towards the root was used for the left pipe, the one towards the top of the reed for the right pipe. If any inference can be drawn from this statement, it is that the pipe held in the left hand was intended to produce the deeper and more voluminous tone, for the internal diameter of the joint would be slightly greater in the part toward the root than in the other part.

As compared with the other forms of pipes, the Phrygian pipes are said by Porphyrius¹ to have had a bore of smaller diameter, and to have emitted much deeper tones. The latter of these two statements agrees exactly with what is known of the tone of the Phrygian pipe from other sources, in which stress is always laid on the deep tones² of the instrument.

SIZES OF PIPES.

The other main class of double pipes consisted, according to Servius, of a pair of pipes, equal in length and with the same internal diameter, '*pares sunt et aequales habent cauernas*,' but there is nothing in this statement which precludes the possibility of a variety of instruments composing this class. The works of art and the testimony of ancient writers show clearly that such variety existed, and even in ancient times there existed a general classification of the instruments, which has been used by Gevaert³ as the basis of his description of the αὐλοί. This classification is found in Athenaeus,

¹ Porphyrius, p. 217, ed. Wallis; cf. Plut. non posse suav. 13.

² Sophocles, frag. 468, *βερέκυντα βρόμον*, explained by Hesychius as referring to the Phrygian pipe; Athenaeus, IV. 84; cf. Eurip. Hel. 1349, *βαρέβρομον αὐλόν*; Aristoph. Nub. 313, *βαρέβρομος αὐλός*; etc.

³ Hist. de la musique, II. 273.

XIV. 36, and is taken at second hand from Aristoxenus, *περὶ αὐλῶν τρήσεως*. Five classes of instruments are there enumerated, — the *παρθένιοι*, *παιδικοί*, *κιθαριστήριοι*, *τέλειοι*, and *ὑπερτέλειοι*, but in Athenaeus, IV. 79, the last two of these classes are called *ἀνδρεῖοι*.

This classification would seem to have been made with reference to the pitch of the instruments; for Aristoxenus (p. 28, ed. Marquard), after giving the range of a single pipe as two octaves and a fifth, says that the highest note of the *παρθένιοι* compared with the lowest note of the *ὑπερτέλειοι* gives an interval of more than three octaves, and evidently he is here comparing the two classes of instruments which show the greatest variation in pitch. In further proof of this may be quoted Aristotle, H. A. 7. 1. 7, where it is stated that the *παρθένιοι* were higher in pitch than the *παιδικοί*, and Athenaeus, IV. 79, where it is stated that the *ἡμίσοι*, which were the same as the *παιδικοί*, were shorter than the *τέλειοι*, and would therefore produce higher tones. As the *ὑπερτέλειοι* were used to accompany men's voices (cf. Pollux, IV. 81), the pitch was evidently lower than that of any of the other classes named.

Not all of the varieties of instrument mentioned in ancient writers can be classified with certainty, but so far as possible an attempt will be made to arrange them according to this scheme of Aristoxenus.

As pipes of very high pitch, which doubtless belong in the class of the *παρθένιοι*, are mentioned the *γίγγροι*¹ (Latin *gingrinae*), which were not more than a span in length, and gave very shrill tones; the *miluina*, described by Festus (p. 123) as *genus tibiae acutissimi soni*; the *σκυταλία*,² which were very short pipes; and probably also the *παράτρητοι*, of which Pollux (IV. 81) says: *θρήνοις ἤρμωσσαν, ὁξὺν καὶ νωθὲς πνέοντες*, and the *νίγλαρος*, Pollux, IV. 82.

The *ἡμίσοι*³ were identical with the *παιδικοί*, and were shorter than the *τέλειοι*, as appears from Athenaeus, IV. 79. They were used at banquets. Probably the *παροῖνοι* also belonged to this class, for of them Pollux, IV. 80, says, *σμικροὶ μὲν, ἴσοι δ' ἄμφω, τὴν γὰρ ἰσότητά συμποσίῳ πρέπειν*. Gevaert adds to this class the *αὐλοὶ ἐμβατήριοι* and the *δακτυλικοί* mentioned by Pollux, IV. 82, the former of which was used in processions and the latter to accompany the

¹ Athenaeus, IV. 76; Pollux, IV. 76; Festus, p. 95; Solinus, 5. 19.

² Athenaeus, IV. 79; Pollux, IV. 82.

³ Cf. Hesychius, s.v. *ἡμίσοι*.

hyporchemes; but it is doubtful whether such separate varieties actually existed, and Pollux says that by some they were said to be, not instruments, but forms of melodies, — which shows that he, at least, knew nothing about them at first hand.

The *κιθαριστήριοι* were used in accord with the lyre, as their name indicates (Pollux, IV. 81), and in this class ought probably to be placed the *μεσόκοποι*, which, as we are informed by Photius and Hesychius, were somewhat shorter than the *τέλειοι*: *ὑποδείστεροι τῶν τελείων, καὶ ὄντες μέσοι*. Here belong also the Phrygian pipes, at least in Roman times, for Horace twice mentions them in connection with the lyre (Od. IV. 1. 22, and Epod. 9. 5), and, furthermore, the *μάγαδς αὐλός* (Athenaeus, XIV. 35–36). The testimony in the passage cited makes it clear that such an instrument existed and belonged to this class, although the word *μάγαδς* when used alone probably meant a kind of harp or lyre.

The *πυθικοί*, the instruments used in the Pythian contest, belonged to the class of *τέλειοι* (Pollux, IV. 81). According to Diomedes (p. 492, ed. Keil), these instruments were used to accompany the cantica of the Roman comedy.

The *αὐλοὶ ὑπερτέλειοι* were used to accompany men's voices, and were the lowest in pitch of all the instruments. In this class belong probably the pipes used in the temples; cf. Mar. Victor., p. 44, ed. Keil, 'spondaeus dictus a tractu cantus eius qui per longas tibias in templis supplicantibus editur, unde et spondaulae appellantur qui huius modi tibias inflare adsuerunt.'

There remain a number of varieties of the pipe which, in the absence of any testimony concerning their nature, cannot be classed with any degree of certainty; these are the *πυκνοί* (Poll. IV. 76), the *δίοποι* (Athen. IV. 79, Poll. IV. 76), the *ἰδουθοί* (Poll. IV. 77), the *βόμβυκες* (Hesych., s.v.), and the *ὑποτρῆτοι* (Athen. IV. 79), while the words *ὑπόπτεροι* (Poll. IV. 77) and *ὑποθέατροι* (Poll. IV. 82) are probably corrupt readings for *ὑποτρῆτοι*.

The *φῶτιγξ* is said by Athenaeus, IV. 78, to have been a form of *πλαγίανλος*; its home was in Egypt.

The entire range of these five classes was, as stated by Aristoxenus (cf. p. 39), more than three octaves; and the classes themselves must have corresponded pretty closely with the ranges of the human voice, — soprano, alto, tenor, baritone, and bass, — as is clear from

the names of some of the classes and from the direct statements about the others. Although the combined range of the five classes is nowhere stated, we can perhaps ascertain it approximately by the following method of reasoning.

The longest straight pipe which could be used, without keys to close the holes beyond the reach of the fingers, and produce a continuous scale, would be about 88 cm. in length; the hole nearest the lower end of the instrument would then be 78.1 cm. from the mouth of the performer. Such an instrument, if it belonged to the class of stopped pipes would give as its lowest tone G of our scale.

The shortest instrument mentioned in ancient writers is the γίγγρος one span or 22.18 cm. in length. A stopped pipe of this length would give as its lowest tone g' of our scale; an open pipe would give g''. Possibly Aristoxenus did not include these short pipes in his classification, for he seems to be speaking of instruments in ordinary use and the γίγγροι do not seem to have been instruments of this character. The normal range of soprano voices is given in *Riemann's Musik-Lexicon*, as from c' to a'', and it is not improbable that c' of our scale was the lowest note of the παρθένιοι as a class. The τέλειοι were probably about an octave below the παρθένιοι, for this is the normal interval between soprano and tenor voices. Their lowest tone would then be c of our scale; their length, if stopped pipes, would be about 62 cm.

The παιδικοί were also known as ἡμίοδοι, a name which suggests that they may have been half as long as the instruments of some other class, perhaps the ὑπερτέλειοι. On this supposition their lowest tone was g; their length, if stopped pipes, about 44 cm. As the lowest note of the κιθαριστήριοι we might assume e of our scale, for one variety of this class, the μεσόκοποι, seems to have had a range midway between that of the τέλειοι and the παιδικοί.

It is further probable that within these different classes there were slight differences in pitch, and that, for example, not all ὑπερτέλειοι gave a tone so low as G of our scale.

Of the instruments in use among the Romans, those which have for us the deepest interest are the ones which are mentioned in the didascalies and in the commentaries to the plays of Terence, and it is desirable, so far as possible, to ascertain the exact character of these instruments.

In the didascalies the following names of instruments are mentioned: *tibiae pares*, *tibiae serranae*, *duae dextrae*, and *tibiae impares*; and this list practically coincides with the statements of Donatus at the beginning of the several plays. If it be assumed that these are all different instruments, there are at most four varieties; but as a matter of fact this number must be somewhat modified.

Placing side by side the statements of the didascalies and the statements of Donatus, which probably do not in all cases refer to the same performances of the plays, the following scheme is presented, in which I. represents the didascalies as they are found in the Bembine Ms.; II. the same, as they are found in the other Mss.; and III. the form in which they are preserved by Donatus.

	I.	II.	III.
Andria	—	—	paribus (dextris <i>et</i> sinistris)
Eunuchus	duabus dextris	duabus dextris	dextra et sinistra
Heauton	primum imparibus deinde duabus dextris	primum imparibus deinde duabus dextris	—
Hecyra	tibiis paribus	tibiis paribus	tibiis paribus
Phormio	—	tibiis imparibus	tibiis serranis
Adelphoe	tibiis serranis	tibiis serranis	tibiis dextris id est Lydiis

Only in the case of the *Hecyra* is there absolute agreement in all three statements,—a fact which may be due to a change in the instrumentation of the other plays for later performances.

From Servius it has already been seen that the *Serranae* were *pares*, and the *duae dextrae*, as the very name indicates, must also have been *pares*. The *impares*, according to Servius, were always *Phrygiae*, and therefore the *dextra* and *sinistra*, if they differed in length, were Phrygian pipes *impares*, or, if they were of the same length, were *pares*. This reduces the actual number of varieties to three, which accords perfectly with the statement in Diomedes (p. 492, ed. Keil), where we are told that the comedies were accompanied by *pares*, *impares*, or *serranae*. Furthermore, in the treatise *de comoedia*, it is said of the comedies: *agebantur autem tibiis paribus aut imparibus et dextris aut sinistris. Dextrae autem tibiae sua gravitate seriam comoediae dictionem pronuntiabant.*

Sinistral et serranae acuminis leuitate iocum in comoedia ostendebant, ubi autem dextra et sinistra acta fabula inscribebatur, mistim ioco et grauitates denuntiabantur. Two left-hand pipes are nowhere mentioned in the didascalies and, if the sinistra is the curved Phrygian pipe, cannot have been used as a pair, so that even Donatus seems to mean only three different varieties.

Of these three varieties the *duae dextrae* are said by Donatus, in the introduction to the Adelphoe, to have been the same as the Lydian pipes: modulata est autem tibiis dextris, id est, Lydiis, ob seriam grauitatem qua fere in omnibus comoediis utitur hic poeta. If this quality of *grauitas* is prominent in nearly all the plays of Terence, and if it can be expressed only by the Lydian pipes,¹ it seems necessary to assume that the pares mentioned by Donatus, in the introductions to the Andria and the Hecyra, were also Lydian pipes. In the *impares* the right pipe was perhaps the same as in the *duae dextrae*, the left pipe longer and curved at the end. The *serranae*, although *pares*, were probably both shorter than the *duae dextrae*.

METHOD OF PERFORMING ON THE DOUBLE PIPE.

In deciding how the musician performed on his two pipes at once there are three possibilities to be considered. He may have produced the same tone simultaneously on both pipes in *unison*; he may have produced tones separated by an octave; or he may have played the melody on one pipe and an accompaniment in accord, with smaller intervals than the octave, on the second.

The third of these methods seems the most probable, for the following reasons. The αὐλοὶ ἑλυμοὶ (*tibiae Phrygiae*) were, as has been shown, *impares*, or unequal in length, and consequently on one of them could be produced tones lower than could be produced on the other, but this was an absolutely useless feature in case the pipes were played in unison. Again, there would be very great difficulty in keeping the instruments absolutely in tune, as would be necessary in

¹ Acro (ad Hor. Carm. IV. 15, 30) assigns to the Lydian pipes a different character: Lydiis tibiis *laeta* canebantur, Phrygiis *tristia*. But in the commentary to Carm. III. 19. 17, both Acro and Porphyrio say that banqueters regularly danced to the music of the Phrygian pipes; and, as these instruments were also prominent in the orgiastic worship of Cybele and of Bacchus, it seems improbable that their music should have been of a very doleful character.

playing them in unison. Furthermore, a passage in Varro (*rer. rust.* 1. 2. 15) shows conclusively for Roman times that the pipes were not played in unison: 'certe, inquit Fundanius, aliut pastio et aliut agri cultura, sed adfinis et ut dextra tibia alia quam sinistra, ita ut tamen sit quodam modo coniuncta, quod est altera eiusdem carminis modorum *incentina* alia *succentina*.

These words of Varro, it is true, might be applied to the second method of performance mentioned above, but assuming that the pipes were reed instruments of cylindrical bore and that each was provided with finger-holes enough to enable the performer to produce a continuous scale by the use of the harmonics, if the pipes were equal in length the range, when playing in octaves, would nevertheless be confined to exactly four tones and their semitones for each series of harmonics of the instrument; for, admitting the possibility of performing on two pipes at once, before the invention of the *syrinx*¹ it was impossible to produce simultaneously fundamental tones on one pipe and harmonics on the other, an operation which would necessitate blowing gently into one pipe and violently into the other at the same time. Either, then, the practical range of the pair must have been limited to four consecutive tones and their semitones, or the pipes were played in accord, with smaller intervals than the octave. It is inconceivable, from similar reasoning, that, with instruments of equal length belonging to the class of open pipes, the performer should ever have played in octaves.

Furthermore in the works of art the two hands of the performer are always near together, and this would never be the case when playing in octaves on stopped pipes. This method of representation was perhaps merely a conventional one; but it is difficult to see how the convention could arise if, in actual performances, the hands were always at considerable distances from each other.

The existence of polyphonic music in both Greek and Roman times can no longer be doubted,² and to judge from Plutarch (de

¹ With the 'speaker,' or *syrinx*, this difficulty is entirely obviated; and if the existence of this mechanism is admitted, there is no physical impossibility in playing the entire scale in octaves.

² Cf. Karl von Jan, in *Fleckeisen's Jahrbücher*, 1879, p. 583; R. Westphal, *Die Musik des Griechischen Alterthums*, p. 168 fg. The following passages I have never seen quoted in support of this theory: Boetius, *Inst. mus.* I. 3, fin.,

mus., ch. 29), it was on the αὐλός that music in two parts was first performed. Apuleius, Flor. III., assigns to Hyagnis the honor of having first performed on his instruments music of this sort: 'primus Hyagnis in canendo manus discedinauit, primus duas tibias uno spiritu animauit, primus laevis et dexteris foraminibus acuto tinnitu et graui bombo concentum miscuit.'

It is only necessary to add that there is no unsurmountable difficulty in performing on such instruments as were found at Pompeii a simple melody and its accompaniment; the fingering of the instruments is the only difficulty, and that could be acquired by practice.

The accompaniment in Greek music, as is now universally agreed, was higher than the melody.¹ This is conclusively shown for the lyre by Aristotle, probl. XIX. 12, and it is safe to conclude that it holds true for the pipes as well. The same relative position of melody and accompaniment is still preserved in the music of the Greek church² and in much of the music of the early Christian church. The natural inference from this fact is that the melody was performed on the pipe held in the left hand; for, as we have seen above, in the case of the Phrygian pipes the longer instrument, and the one which would consequently produce the lower tones, was held in the left hand; and if on the Phrygian pipes the melody was performed with the left pipe, probably the same was also true of the other varieties of the instrument.

It is hardly conceivable that the Romans did not hold their pipes exactly as the Greeks did, more particularly as the art of playing on this instrument was believed by the Romans themselves to have been borrowed from the Greeks. The following passage from Varro (rer.

'Est enim consonantia dissimilium inter se uocum concordia'; id. ib. I. 28, 'Quotiens enim duo nerui uno grauiore intenduntur *simulque* pulsati reddunt permixtum quodammodo et suauem sonum, duaeque uoces in unum quasi coniunctae coalescunt; tunc fit ea, quae dicitur consonantia, Cum uero *simul* pulsati sibi quisque ire cupit nec permiscet ad aurem suauem atque unum ex duobus compositum sonum, tunc est, quae dicitur dissonantia.' In the experiments of Pythagoras, as described by Censorinus (de die nat., X. 10), it would seem that two pipes of different lengths were blown upon at the same time to produce the accord of the fourth, the fifth, and the octave.

¹ Westphal, Harmonik, p. 113; Gevaert, Hist. de la Mus., I. 364; K. von Jan, Jahrbücher, 1879, p. 583.

² Christ, Anth. Carm. Christ., p. 113.

rust. I. 2. 15 sq.) would seem, however, to show that the accompaniment at Rome was in his time played on the pipe held in the left hand: 'Certe, inquit Fundanius, aliut pastio et aliut agri cultura, sed adfinis et ut dextra tibia alia quam sinistra, ita ut tamen sit quodam modo coniuncta, quod est altera eiusdem carminis modorum *incentiua* altera *succentiua*. Et quidem licet adicias, inquam, pastorum uitam esse *incentiuam* agricolarum *succentiua* auctore doctissimo homine Dicaearcho, qui Graeciae uita qualis fuerit ab initio nobis ita ostendit, ut superioribus temporibus fuisse doceat, cum homines pastoriciam uitam agerent neque scirent etiam arare terram aut serere arbores aut putare; ab iis inferiore gradu aetatis susceptam agri culturam. Quocirca ei succinit pastorali [L], quod est inferior, ut tibia sinistra a dextrae foraminibus.' The only difficulty lies in the last sentence, for no inference can be drawn from the first sentence, since the natural tendency would be to mention the right hand before the left, and further to mention the *incentiua* before the *succentiua*, as is indicated by the repetition of these words in the same order in the very next line. In the last sentence the word *pastorali* must be omitted, or *ei* must be changed to *ea*, as is shown by the context, *pastorum* uitam esse *incentiuam*; but the words *ut tibia sinistra a dextrae foraminibus* are incomprehensible. The use of the preposition *ab* with *inferior* is very unusual, if not unparalleled, and it is not impossible that the whole phrase beginning with *ut* is an interpolation.

The passage from Apuleius, Flor. III. (quoted on page 45), seems further to imply that the higher tones were produced on the instrument held in the left hand, the deeper tones on the one held in the right hand. In the words, 'primus laevis et dexteris foraminibus acuto tinnitu et graui bombo concentum musicum miscuit,' *laeua*, *dextera*, *foramina* are clearly equivalent to *laeua*, *dextra*, *tibia*, and, unless we have in this passage a singular instance of chiasmus, the inference is unavoidable that the *acutus tinnitus* was produced on the left pipe, the *grauis bombus* on the right pipe. If, therefore, the accompaniment was higher than the melody, it must have been performed on the instrument held in the left hand.

It is very improbable that the Romans made any change either in the manner of holding the pipes, or in the relative pitch of melody and accompaniment, and therefore the conclusion seems inevitable that both Greeks and Romans regularly played the accompaniment on the pipe held in the left hand.

But the Phrygian left pipe was longer than the right, and therefore the accompaniment, if played on it, would at times be lower than the melody, if any use whatever was made of the lower tones. That the lower tones were used is indicated by Servius in the passage quoted on page 38, where he attributes to Varro the statement that the right Phrygian pipe had one hole and the left two, one of which gave a deep and the other a high tone. Although it is very improbable that the number¹ of finger-holes on either pipe was so small as is here stated, it is significant that both high and low tones are attributed to the pipe held in the left hand. The Phrygian pipes were a prominent feature in the orgiastic worship of Cybele and of Bacchus, and possibly in the music which accompanied this worship the accompaniment was performed on the pipe held in the left hand, and alternately rose above the melody and *droned* below it.

DESCRIPTION OF EXISTING INSTRUMENTS.

The instruments found at Pompeii in 1867, four in number, are straight tubes of ivory, which were originally covered with close-

¹ The use of the present tense 'habet' in this passage implies that this description of the Phrygian pipes applies to instruments in use in Varro's time; but it must be remembered that Varro, in stating that the tibia in ancient times had only four holes (cf. page 4, note), adds the statement that he had actually seen such instruments in the temple of Marsyas, leaving us to infer that all instruments in use in his time had a greater number of finger-holes. Not only is it incredible that any attempt was ever made to play a melody and its accompaniment on a pair of pipes such as is here described, one of which would have a range of two notes and the other of three, but the works of art which I have seen, with possibly a single exception, do not confirm this statement as to the number of finger-holes. The single exception is found in a relief on a sarcophagus in the Louvre, Fröhner, No. 300, where a bacchant is represented playing on Phrygian pipes. The curved pipe, which is held in the *right* hand, has two side-tubes near the lower end, but the straight pipe has neither tubes nor holes.

Although it is very improbable that the number of finger-holes was so limited as is indicated by this statement of Varro, it is not unlikely that the left pipe had a greater number of holes and a wider range of notes than did the right pipe. Festus, p. 109, says: *impares tibiae numero foraminum discretæ*, and although I have seen but two works of art in which the pipes of a Phrygian pair differed in respect to the number of holes, in both cases the curved pipe had the greater number. These two works of art are a sarcophagus, No. 751, in the Lateran Museum at Rome, and the sarcophagus, No. 300, in the Louvre.

fitting bands of metal, probably silver. This metal is in some places badly oxidized, and in a few instances has entirely disappeared ; but, on the whole, the state of preservation is remarkable. Each tube has, at the end most remote from the finger-holes, a pear-shaped bulb, also of ivory, 3.8 cm. in length, into which is inserted a flaring tube of ivory, 3.5 cm. in length, provided with a socket into which the mouth-piece was inserted when the instrument was in use.

Through the kindness of the director of the Naples Museum I was permitted to examine these instruments and to make careful measurements of them, and from these measurements it is possible to reconstruct the ancient instruments and to ascertain by experiment their scales.

The bore of all four of the instruments is cylindrical and 0.95 cm. in diameter, the external diameter of the tube being in each case 1.42 cm.

The following measurements were all made with a standard rule measuring to the sixty-fourth of an inch, and were all repeated to insure accuracy. The measurements as given in the text have been reduced to the metric system from the original measurements in inches, which are added in the foot-notes. The distances were all measured from the lower end of the tube to the nearest side of the hole or band. In some instances the holes in the tube are still covered by the bands, and in such cases the measurement indicates the distance to the hole in the band and the diameter of the hole.

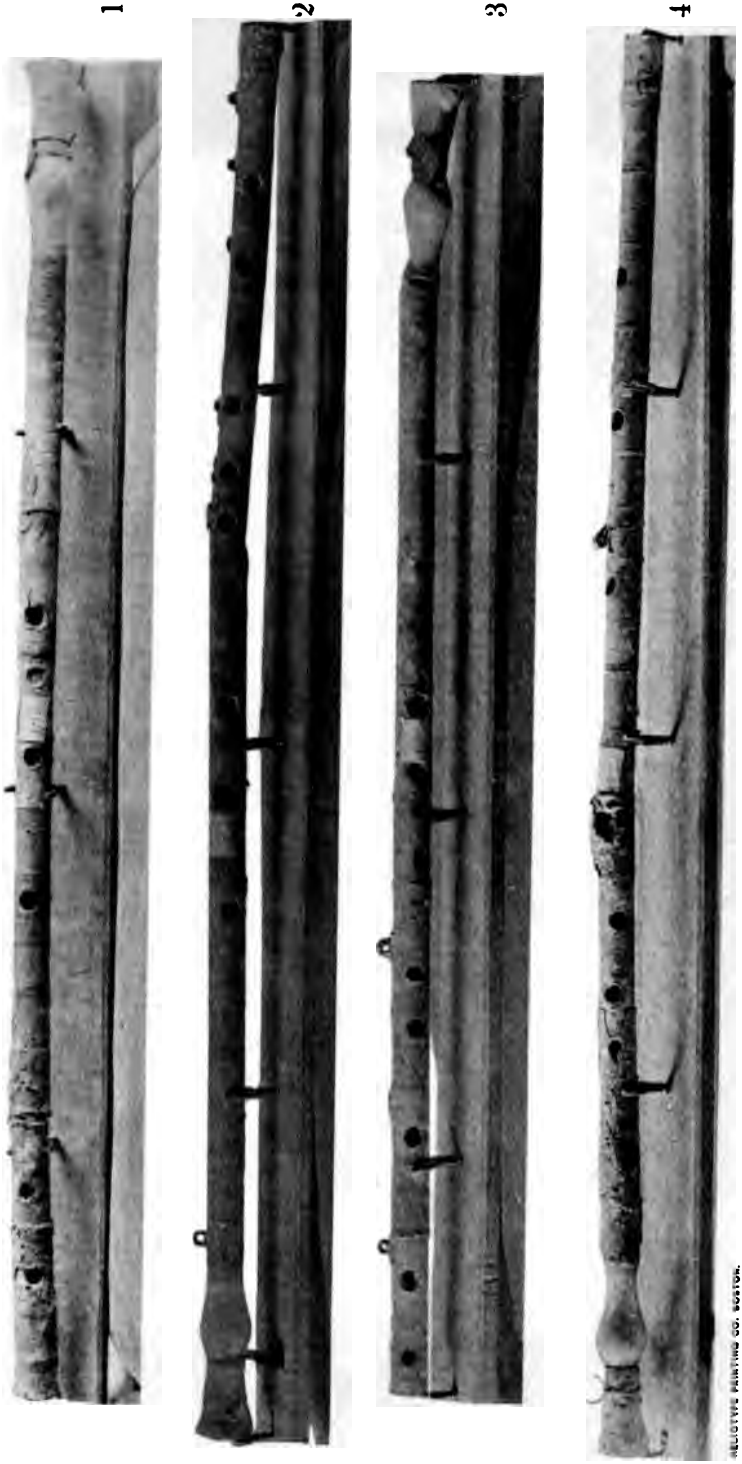
I. CATALOGUE No. 76891.

Total length, 49.68 cm. A, 4.28, diam. 0.63 ; B, 7.46, diam. 0.63 ; C, 11.74, diam. 0.63 ; D, 13.97, diam. 0.63 ; E, 15.87, diam. 0.63 ; F, 18.09, diam. 0.79 ; G, 19.52 to 21.9, a band in which no hole was visible ; H, 23.49, diam. 0.79 ; I, 26.51, diam. 0.71 ; K, 28.74, diam. 0.79 ; L, on the under side of the tube, 31.75, diam. 0.79.¹

Close to the bulb in this instrument is a narrow band, somewhat corroded, but which can be seen distinctly in the representation (Plate II. 1).

¹ Total length, 19 $\frac{2}{3}$. A, 1 $\frac{1}{8}$, diam. $\frac{1}{4}$; B, 2 $\frac{1}{8}$, diam. $\frac{1}{4}$; C, 4 $\frac{3}{8}$, diam. $\frac{1}{4}$; D, 5 $\frac{1}{8}$, diam. $\frac{1}{4}$; E, 6 $\frac{1}{8}$, diam. $\frac{1}{4}$; F, 7 $\frac{1}{8}$, diam. $\frac{3}{8}$; G, 7 $\frac{1}{8}$ to 8 $\frac{3}{8}$, a band in which no hole was visible ; H, 9 $\frac{1}{8}$, diam. $\frac{3}{8}$; I, 10 $\frac{1}{8}$, diam. $\frac{3}{8}$; K, 11 $\frac{1}{8}$, diam. $\frac{3}{8}$; L, on the under side of the tube, 12 $\frac{1}{8}$, diam. $\frac{3}{8}$.

PLATE II.



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The bands covering holes F, H, and I have traces of the mechanism described above to aid in turning the bands. This was probably the case with all of the bands originally, but the silver is so badly oxidized that the traces of the mechanism have disappeared. The holes C, D, and E are covered by the bands; the measurements are of the holes in the bands. In the other three instruments there is a hole corresponding to the band G in this instrument, yet I failed to discover any hole in this band.

II. CATALOGUE No. 76892.

Total length, 52.7 cm. A, a band 1.9 cm. wide, in which there is no hole; B, a band from 1.9 to 4.44, with turning mechanism, but no hole; C, 6.03, diam. 0.63; D, 9.20, diam. 0.87; E, 11.11 to 13.33, a band in which there is no hole; F, 13.65, diam. 0.79; G, 16.03, diam. 0.79; H, 18.09, diam. 0.79; I, 20.63, diam. 0.95; K, 24.76, diam. 0.95; L, 27.94, diam. 0.63; M, 29.21, diam. 0.63 (this hole is on the under side of the tube); N, 32.22, diam. 0.79.¹

Close to the bulb on this instrument there is a band of silver 1.58 cm. in width and provided with the mechanism for turning. The silver is slightly oxidized, but close by the bulb is a hole in the tube itself not larger than a medium-sized pin. The band and the hole can be seen in Plate II. 2. The bands of B, C, D, F, G, H, have the mechanism for turning, although in the case of G there is only a trace of it still left. In each of the other instruments there is a hole corresponding to the band E of this instrument, which has no hole.

III. CATALOGUE No. 76893.

Total length, 49.21 cm. A, 1.27, diam. 0.63; B, 4.12, diam. 0.79; C, a band without hole or mechanism for turning; D, 9.68, diam. 0.79; E, 12.06, diam. 0.55; F, 13.81, diam. 0.63; G, 15.87, diam. 0.63; H, 18.09, diam. 0.63; I, 20.16, diam. 0.79; K, 23.33,

¹ Total length, 20½. A, a band ¾ in. wide, in which there is no hole; B, a band from ¾ to 1½, with turning mechanism, but no hole; C, 2½, diam. ½; D, 3½, diam. ⅞; E, 4½ to 5½, a band in which there is no hole; F, 5½, diam. ⅞; G, 6⅞, diam. ⅞; H, 7½, diam. ⅞; I, 8½, diam. ¾; K, 9½, diam. ¾; L, 11, diam. ½; M, 11½, diam. ½ (this hole is on the under side of the tube); N, 12½, diam. ⅞.

diam. 0.63; L, 25.71, diam. 0.79; M, 27.95, diam. 0.63, on the under side of the tube; N, 30.95, diam. 0.63.¹

The bands of B, D, F, G, H, L have the mechanism for turning, which has, however, almost disappeared in the case of D, F, and H. The holes E and H are still covered by the bands. This instrument is shown in Plate II. 3.

IV. CATALOGUE No. 76894.

Total length, 53.65 cm. A, 1.4, diam. 0.63; B, a band without a hole from 2.54 to 5.08; C, 6.03, diam. 0.71; D, 8.89, diam. 0.79; E, 12.22, diam. 0.63; F, 14.28, diam. 0.79; G, 16.51, diam. 0.63; H, 18.41, diam. 0.63; I, 20.47, diam. 0.63; K, 22.70, diam. 0.63; L, 24.76, diam. 0.63; M, 27.30, diam. 0.64; N, 29.36, diam. 0.64; O, 33.17, diam. 0.64; P, 35.87, diam. 0.64; Q, 37.95, diam. 0.56.²

The hole Q, as can be seen from Plate II. 4, is now slightly elongated, but this is clearly the result of an accident; all of the holes in this and in the other instruments are circular, or very nearly so, and with very few exceptions the edges and inner surfaces of the holes are well preserved in all of these instruments.

There is no hole on the under side of this instrument, and consequently the engraving of it shown by Gevaert (Vol. II., p. 280) is incorrect in that particular, as also in the representation of hole A, which in the original is very near the lower end of the tube. Only the band of hole H has now the mechanism for turning the band, although originally most of the bands were doubtless thus equipped.

The holes A, C, E, G, H, I, K in this instrument are still covered by the bands. The metal casing near the bulb is so badly oxidized that it is impossible to say whether there was a separate band at this point, as in Nos. I. and II.

Each instrument has a separate band for each hole, or did have

¹ Total length, 19½. A, ½, diam. ¼; B, 1½, diam. ⅓; C, a band without hole or mechanism for turning; D, 3⅞, diam. ⅝; E, 4½, diam. ⅓; F, 5⅞, diam. ¼; G, 6½, diam. ¼; H, 7½, diam. ¼; I, 7½, diam. ⅝; K, 9⅞, diam. ¼; L, 10½, diam. ⅝; M, 11, diam. ¼, on the under side of the tube; N, 12⅞, diam. ¼.

² Total length, 21½. A, ⅞, diam. ¼; B, a band without a hole from 1 to 2; C, 2½, diam. ⅓; D, 3½, diam. ⅝; E, 4½, diam. ¼; F, 5½, diam. ⅝; G, 6½, diam. ¼; H, 7½, diam. ¼; I, 8⅞, diam. ¼; K, 8½, diam. ¼; L, 9½, diam. ¼; M, 10½, diam. ¼; N, 11⅞, diam. ¼; O, 13⅞, diam. ¼; P, 14½, diam. ¼; Q, 14½, diam. ⅓.

originally; but a careful search failed to reveal any band in which there were two holes as described by Gevaert (Vol. II., p. 646), although the fac-simile of No. II. in the Naples Museum does have one band in which there are two holes so arranged that both cannot be open at the same time.

It is to be observed that no two of these instruments are of exactly the same length, but that I. and III. differ in this respect by only 0.42 cm., and that II. and IV. differ by 0.95 cm., while between I. and IV., the two extremes, there is a difference in length of 3.44 cm., or enough to make a difference in pitch with pipes of these dimensions of practically an entire tone. It would appear, therefore, that these instruments belong in two different classes. Experiments were first made with a pipe corresponding to No. IV. Into this a clarinet mouth-piece made from a slender rod of bamboo was inserted, in form like the one described in von Jan's article in Baumeister's *Denkmäler*. Repeated experiments showed that the proper length for the mouth-piece was not to exceed 5 cm., for with a mouth-piece of this length the complete chromatic scale can be produced through one octave and without the aid of the three holes nearest the mouth-piece. If these three holes are then opened successively, the second, third, and fourth of the octave can be produced; and then, with all the holes closed, the first harmonic of the closed pipe,¹ *i.e.* the fifth above the octave, is produced, which is the

¹ Both Gevaert (Vol. II., p. 285) and von Jan (Baumeister's *Denkmäler*, p. 556) say that this is impossible without the aid of the 'speaker,' and the latter says: "Ein cylindrisches Rohr von so einfacher Konstruktion wie die aus Athen und Pompeji erhaltenen Auloi ermöglicht nach Aussprache der Sachverständigen für jeden Griff gar nur einen einzigen Ton," and farther on: "Ob nun jene Auloi eine andere Konstruktion hatten als die von uns in Athen und Pompeji gefundenen Reste, oder ob die Kunstfertigkeit der Bläser auf denselben Resultate erzielte, die wir jetzt nicht nur praktisch sondern auch theoretisch nach den Gesetzen der Akustik für unmöglich halten, das lässt sich vorläufig nicht entscheiden."

It is, however, a mistake to suppose that the laws of Acoustics apply only to elaborately constructed pipes. These laws apply to all pipes, however rudely constructed; nothing could be simpler than the brass tubes with which these experiments were conducted, and yet I have repeatedly produced the harmonics on them, without the aid of a 'speaker.'

Even on the clarinet it is possible to produce the harmonics without the aid of the 'speaker,' although it is by no means easy, as I have been informed by a practical manufacturer of clarinets. The tube of the clarinet, however, has a much wider bore than that of these pipes from Pompeii.

next note in the diatonic scale. It requires some skill and practice to produce this particular tone, but with care it can be produced. The harmonics of the tones produced from the other holes require far less skill, and the second harmonic, or sixth above the twelfth, can be produced from any of the holes without difficulty by slightly compressing the reed near its base with the lips.

The hole nearest the mouth-piece can be made to serve as a 'speaker' by turning the bami so that the hole is but slightly uncovered, and it is not impossible that the ancient musicians helped themselves in this way until the 'speaker' was invented. The hole designated by A in the description of this instrument is so near the lower end of the pipe that it has very little effect on the pitch when opened, although the effect can be easily noticed.

The scale of this instrument, compared with the standard pitch, is, $C, C^2 = C^2, G, G^2 = A, A^2, B, C, C^2, F, F^2 = G, G^2$ and continuing in the first harmonic, $C, C^2, G, G^2, C^3, C^4, F, F^2, G, G^2, G^3, G^4, F, F^2, C, C^2, F, F^2$. In the second harmonic the following tones can be produced with ease, $C^3, G^3, G^4, C^4, C^5, C^6, F^3, F^4, F^5, F^6$, thus giving this instrument a range of full three octaves and fully confirming the statement of Astrucius as to the range of the pipe, while also confirming the statement of Frochot that three tones could be produced from each hole.

Experiments made by substituting an ivory-reed for the chamber-reed were very unsatisfactory, and a bassoon reed made of cane was used instead. This reed, which is in form exactly like the ivory-reed, but considerably larger, produced practically the same results as did the chamber-reed. The same continuous scale can be produced and the same harmonic series of tones — a fact which may be attributed as further evidence that the harmonics of the pipe are independent of the form of reed employed. With the chamber mouth-piece, however, the tone is richer and fuller and the pitch in the various tones is more constant, for with the bassoon-reed the basic character of the pressure of the lips upon the reed causes a corresponding variation in the pitch of the note.

It seems impossible to decide which form of mouth-piece was actually employed on these instruments to produce tones with possibly a slight possibility of error in the chamber-type, which would require greater accuracy in pitch.

The scale of the instrument No. 76892, with a clarinet mouth-piece long enough to bring it in tune with the instrument just described (*i.e.* 0.95 cm. longer), is as follows : fundamental tones, d, e, f, g, g[♯], a, b[♭], c', c'[♯], d', e'; first harmonic, a', b', c'', d'', d''[♯], e'', f'', g'', g''[♯], a'', b''; second harmonic, f''[♯], g''[♯], a'', b'', c''', c'''[♯], d'''. It is to be observed that all of these tones correspond to tones which can be produced on the instrument first described — a fact which can be further illustrated by blowing on both pipes at the same time. The scale of the second instrument is, however, less complete than that of the first; the tones f' and g' of the fundamental series are lacking, as are also several of the semitones. There are two bands on this instrument in which I could discover no hole, and one of them corresponds exactly with the band of the f[♯] hole in the instrument first described. The other band is provided with the mechanism for turning, and if provided with a hole would give the note e[♭]. If both these bands were provided with holes, the second instrument would lack only the tones b, f', and g' of the first instrument.

The scales of these instruments agree so exactly in respect to the other tones that it is at least conceivable that we have here preserved the two pipes of a pair, of which one for some reason had a scale less complete than the other. Gevaert (Vol. II., p. 280) expresses his belief that these instruments from Pompeii were intended to be used singly, and he is evidently influenced in this decision by the fact that these pipes have so large a number of holes. In fact, however, this is insufficient ground on which to base such a belief. As has been shown above, the double pipe was far more frequently used than was the single pipe, and to judge from the price paid by Ismenias,¹ these instruments were very expensive, which makes it improbable that four single instruments should have belonged to one man; and yet these pipes were all found together, and evidently belonged to the same musician. The pipe in the hand of the muse, Pl. I. 1, was one of a pair, and the number of finger-holes actually represented on this instrument is at least nine. Of the pipes shown on a sarcophagus in the British Museum one has seven, the other five, lateral tubes; and as these tubes are near the middle of very long instruments, and there is considerable space between the lowest

¹ Lucian, *adv. ind.* 5.

one of them and the end of the instrument, it is natural to suppose that there were several finger-holes in this space, which the sculptor did not attempt to represent. There are many other reliefs and works of art, representing the double pipe, in which a similar space is shown, and, assuming that these representations are fairly correct, it is clear that the ancient musician often performed on two pipes each of which had a considerable number of holes.

It is by no means certain that the two pipes of a pair of *pares* had each the same number of finger-holes, similarly placed, and, as a matter of fact, no two ancient instruments have ever been found which were exactly alike; but in the case of these two instruments the scales are such that with slight limitations they could be used as a pair, and it therefore seems not improbable that they were so used.

The instrument No. 76891, with a mouth-piece 4 cm. in length, gives the following scale: fundamental, e, f, f[♯], g[♯], a, a[♯], b, d', e', f', g'; first harmonic, b', c'', c''[♯], d''[♯], e'', f'', f''[♯], a'', b'', c''', d'''; second harmonic, g''[♯], a'', a''[♯], c''', c'''[♯], d''', d'''[♯].

There is a band on this instrument which covers the proper position for a hole to produce the note c', but no hole is visible in this band.

With a similar mouth-piece the instrument No. 76893 gives the following scale: fundamental, e, ^xe, f, g, g[♯], a, a[♯], b, c', c'[♯], d'[♯], e', f'[♯]; first harmonic, b', ^xb', c'', d'', d''[♯], e'', f'', f''[♯], g'', g''[♯], a''[♯], b'', c'''[♯]; second harmonic, g''[♯], ^xg''[♯], a'', b'', c''', c'''[♯], d''', d'''[♯], e'''.

There is a band on this instrument in which no hole is visible, but which covers the proper position for a hole to produce the note f[♯].

The hole 1.27 cm. from the lower end of this instrument has only a very slight influence on the pitch of the pipe—less than half a tone. The two instruments last described are of almost exactly the same length, differing in this respect by less than 0.5 cm. The scales of the two instruments agree with respect to a majority of the tones which can be produced, and where there is lack of agreement, the scale of one instrument supplements that of the other, so that by the aid of both a complete chromatic scale can be produced. There are missing, however, the holes necessary to produce the tones from g' of the fundamental scale to b', the lowest tone of the first harmonic series.

It is perhaps less probable that these two instruments formed a

pair than in the case of the two instruments first described, but even here it is not impossible that we have preserved a pair of pipes of a different variety from the first pair.

The scales of the instruments as here given are in terms of standard pitch, and have not been changed to conform with the theory that the pitch of ancient times was a minor third below that of modern times.¹

There are two instruments in the British Museum, of which a partial description has been given on page 16. These instruments, which were acquired by the Museum from the Castellani collection, consisted originally of an inner tube or lining of wood covered with a bronze casing composed of bands similar to those found on the instruments from Pompeii, but without the mechanism to enable the performer to turn them. The wooden lining has almost entirely disappeared, but enough of it is still preserved in one of the instruments to give an idea of the original form and of the diameter of the bore. The instruments are shown in Plate I., Figs. 2 and 3, and in the hole near the middle of Fig. 2 a portion of the wooden core is still visible.

¹ Unfortunately, these scales do not agree with the scales given by Gevaert (Vol. II., p. 295) for these same instruments. The scales there given are raised a minor third, and still the lowest tone of each instrument is said to be d, which assumes an actual b (= h of the German notation) of the modern pitch (cf. p. 286).

I am inclined to think that the fac-similes of the Pompeian instruments on which the scales of Gevaert were determined are inexact, and for the following reasons. On page 280 it is said of the Pompeian instruments: "tous ont la même forme, la même dimension et ne diffèrent entre eux que par le nombre de trous dont ils sont percés"; and on page 286: "toutes quatre ont la même longueur." As a matter of fact, no two of these instruments are of exactly the same length; the longest is 1 $\frac{1}{4}$ inches, or nearly 4.5 cm., longer than the shortest.

To produce the note b in a stopped pipe the vibrating column of air should be about 66 cm. in length, and as the longest of these instruments is only 53.6 cm. long, it would require theoretically a mouth-piece nearly 13 cm. in length in order to produce this note, while, as Gevaert himself says (p. 292), the mouth-pieces were very small. The so-called fac-simile of No. 76892 in the Naples Museum does not have the narrow band and hole near the mouth-piece which is distinctly shown in Plate II. 2, and it has eleven holes, two in one band, while in the original, which I examined with especial reference to this point, I failed to discover any band with two holes.

It is for these reasons that I have ventured to disagree with Gevaert in his conclusions as to the scales of these instruments.

The lines which mark the divisions between the bands are not very distinct in the plate, a fact which is due to the unsatisfactory nature of the photograph from which the reproductions were made, but on close inspection the lines can be distinguished. One of the instruments is now broken just above the hole for the mouth-piece, and shows at the point where it is broken a portion of the wooden lining which originally extended from end to end of the tube. The other instrument, which is unbroken, is closed at the end above the mouth-piece, and undoubtedly the broken instrument was originally closed at this end. Mr. Arthur H. Smith, to whom I am indebted for the measurements of these instruments, thinks that both of them are broken at the end farthest from the mouth-piece; but inasmuch as the distance from this end to the mouth-piece varies in the two instruments by only one millimeter, and as this can hardly be the result of accident, it is probable that both instruments are practically complete at the lower end, and that the imperfect edge of the metal gave rise to the belief that they were broken.

In the measurements which follow the dimensions are all given in centimeters. The distance is given from the lower end of the instrument to the nearest side of each hole, and the diameter of the hole in two dimensions, the first lengthwise of the instrument, and the second measurement at right angles with the first.

V. CATALOGUE No. 84, 4-9, 5.

Instrument broken at the upper end. Length, 27.6; diameter at the upper end, Ext. 1.7×1.62 , Int. 0.8×0.8 , this being the diameter of the wooden lining which is preserved; lower end, Ext. 1.5×1.5 , Int. 1.25×1.30 (the wooden lining has entirely disappeared at this end). Holes: A, 1.15, diam. 0.75×0.7 ; B, 4.3, diam. 0.8×0.78 (edge of the hole imperfect); C, 6.85, diam. 0.8×0.73 (edge of the hole imperfect); D, 12.12, diam. 0.75×0.78 (below, part of the wooden lining with hole, diam. 0.7×0.4); E, 19.1, diam. 0.8×0.72 (edge of the hole imperfect); F, bust of Maenad raised above the surface of the instrument, and above the forehead a hole slanting toward the lower end of the tube 24.4, diam. 0.6×0.6 .

There is a separate band for each of the finger-holes, and in addition a band with no hole between D and E. All of the finger-holes in this instrument are on the same side of the tube.

VI. CATALOGUE No. 84, 4-9, 6.

Instrument closed at the upper end. Length, 29.8; diameter at the upper end, Ext. 1.52×1.6 , the internal diameter cannot be ascertained as this end of the instrument is closed; lower end, Ext. 1.4×1.5 , Int. 1.3×1.36 . The wooden lining of this instrument has entirely disappeared. Holes: A, 1.0, diam. 0.55×0.55 ; B, 3.2, diam. 0.75×0.8 ; C, 6.8, diam. 0.6×0.55 ; D, 13.75, diam. 0.78×0.79 ; E, 16.0, diam. 0.83×0.76 ; F, 19.3, diam. 0.75×0.73 ; G, 24.5, hole for the reception of the mouth-piece exactly as in the instrument last described, diam. 0.63×0.62 .

The hole E is on the under side of the tube, and was doubtless closed with the thumb; the other holes are all on the upper side of the tube. Each hole has a separate band, and there are two additional bands between C and D, but neither of them has any trace of a finger-hole.

In my experiments to determine, if possible, the scales of these instruments, I assumed, for the reasons stated on page 17, that they were reed-instruments of the *πλαγιάυλος*-type, and that the main bore of the tubes was originally cylindrical and 0.8 cm. in diameter, this being the internal diameter of the wooden lining where it is preserved. I used a very small clarinet mouth-piece, and connected it with the instrument by a rubber tube. With such an arrangement about 10 cm. in length, the note produced when all of the holes are open is the octave of the note produced when all are closed.

Although this mouth-piece is fully one-third as long as the instruments themselves, and is double the length of the one used with the Pompeian instruments, the results obtained are such as to justify the assumption that mouth-pieces of this length were used on these instruments. The scale of fundamental tones of instrument No. VI. is, in terms of standard pitch, a, a^{\sharp} , $\times b$, c', e', f'^{\sharp} , a', and each of the last three notes can be lowered a half tone by partially closing the hole through which it is produced. The notes a^{\sharp} and b are a very little flat. The harmonics can be produced, and are those of the stopped-pipe.

With a similar mouth-piece the instrument No. V. gives the following scale of fundamental notes: a, a^{\sharp} , b, c', d^{\sharp} , a', and by partially closing the proper holes d' and g^{\sharp} can be produced.

In the description of these instruments attention was called to the presence on each of one or more bands not provided with finger-holes. The single band on No. V. covers the proper position of a hole to produce the sixth, and the two contiguous bands of No. VI. cover the positions of holes to produce the fourth and the semitone between the fourth and the fifth. Similar bands without holes are found on the Pompeian instruments I., II., and IV., and on the instrument shown in Plate I. 1 ; but in every instance the band without a hole is placed between two other bands, each of which is provided with a hole.

Under these circumstances it is natural to suppose that the instrument-maker, to lessen the friction and the consequent wear of the instruments, made the movable bands with finger-holes narrow, and that, to prevent them from slipping up and down on the tube, he inserted between them fixed bands without holes.

This explanation does not, however, meet the case of the instrument No. VI., in which two contiguous bands are left without holes, since there is no apparent reason for inserting two fixed bands where one would be sufficient ; and inasmuch as one of these bands covers the position of a hole to produce the fourth, the only missing tone in the diatonic scale, it has occurred to me that possibly this instrument is unfinished, and that when finished one or both of these bands would have been provided with a finger-hole. With an additional hole for the fourth, the complete chromatic scale could be produced on this instrument by the method of fingering suggested above.

The arrangement of the finger-holes on this instrument is such as to imply that it is a single pipe, and not one of a pair. There are two distinct groups of three holes each, one near the mouth-piece and the other at the lower open end of the instrument. The space between these two groups is so great that when either set of holes is closed by the fingers of one hand, only with great difficulty can a hole of the other group be covered with a finger of the same hand.

There are two other instruments in the British Museum which were found in a tomb near Athens, and were brought to London with the Elgin collection. These instruments are simple tubes of wood (sycamore), open at both ends, and each tube has six finger-holes, one of which is in each case on the under side of the tube, and was evidently closed by the thumb of the performer. No bands or other

mechanical devices, and no traces of such arrangements, are found on either of these instruments. The main bore of the tubes, although not exactly cylindrical, is nearly so, and the instruments were certainly not conical pipes like the modern oboe, for in one of them it is the end nearest the mouth-piece which has the greater internal diameter.

The measurements of these instruments were made for me by Mr. Smith, and were made in exactly the same manner as were those of the two instruments last described.

VII. ELGIN INSTRUMENT A.

This instrument is not perfectly straight, but has somewhat the appearance of an elongated S. The length measured along the curvature is 35.6 cm., in a straight line 35 cm. The upper end is at present very much injured, and the sides of the pipe are pressed together; the internal diameter is 0.8×0.4 . The diameter at the lower end is, Ext. 1.7×1.5 , Int. 1.0×0.85 . The distances to the holes are, as before, measured from the lower end of the instrument to the nearest side. A, 4.1, diam. 0.85×0.75 ; B, 9.3, diam. 0.95×0.75 ; C, 12.8, diam. 0.9×0.85 ; D, 16.3; diam. 0.94×0.78 ; E, 19.4 (on the under side of the tube), diam. 0.9×0.73 ; F. 22.8. diam. 0.9×0.8 .

VIII. ELGIN INSTRUMENT B.

This instrument is straight, and is 31.2 cm. in length. Diameter at the upper end, Ext. 1.45×1.20 , Int. 1.25×1.03 ; at the lower end, Ext. 1.65×1.45 , Int. 0.9×0.83 . Holes: A, 6.4, diam. 0.9×0.73 ; B, 10.5, diam. 0.93×0.83 ; C, 13.7, diam. 0.93×0.80 ; D, 16.8, diam. 0.88×0.77 ; E, 20.4 (on the under side of the tube), diam. 0.88×0.73 ; F, 23.0, diam. 0.85×0.75 .

These pipes are apparently reed-instruments of the same general type as those found at Pompeii, but are of much less elaborate construction. Without some arrangement for closing the holes not in use, they cannot have been used as a pair, since it would be impossible to close all of the holes of either instrument with the fingers of one hand. Furthermore, the pipes are of unequal length, and although the longer pipe is slightly curved, it has not the shape of the Phrygian

pipe as shown in works of art ; so that if it has been correctly supposed that the *impares* were always Phrygian pipes, these instruments cannot have formed a pair.

To determine the scales of these instruments I used a clarinet mouth-piece,¹ which, for the instrument No. VII., was made 7.4 cm. long, because with a mouth-piece of that length the note produced, when all of the finger-holes are open, is the octave of the note produced when all are closed.

The finger-holes of both instruments are oval and of large size, so that from each two tones can be readily produced, one when the hole is partially uncovered, the other when it is entirely open.²

The following scale of fundamental tones was produced, the letters in parenthesis indicating tones produced when the holes were only partially uncovered : g, (g[♯]) a, (a[♯]) b, c', (c'♯) d', (d'♯) e', (f'♯) g'.

With the instrument No. VIII. I used a mouth-piece 8.2 cm. in length, and produced the following scale of fundamental tones : a, (b) c', (c'♯) d, (d'♯) e', (f') f'♯, (g'♯) a', (a'♯) b'. The harmonics can be easily produced on both of these instruments, and are those of the stopped pipe.

In order that the note produced with all of the holes open should be the octave of the note when all are closed, the instrument No. VIII. would require a mouth-piece over 12 cm. in length, and as such a mouth-piece would make this instrument longer than No. VII., it seemed necessary to adopt the shorter form here described.

¹ The mouth-pieces with which the scales of all eight of the instruments here described were finally determined, were made exactly like the mouth-piece of an ordinary clarinet, but very much smaller. The opening over which the reed was bound was in each instance 2.3 cm. in length.

² Cf. Gevaert, Vol. II., p. 646.

THE TRAGEDY RHESUS.¹

BY JOHN C. ROLFE.

ALTHOUGH the Rhesus has been handed down to us as one of the tragedies of Euripides, its genuineness was suspected even in antiquity, for in the first of the two arguments which we possess, after a brief outline of the plot, we read these words: τοῦτο τὸ δράμα εἶναι νόθον ὑπενόησαν, Εὐριπίδου δὲ μὴ εἶναι· τὸν γὰρ Σοφοκλεῖον μᾶλλον ὑποφαίνειν χαρακτήρα. ἐν μέντοι ταῖς διδασκαλίαις ὡς γνήσιον ἀναγράφεται, καὶ ἡ περὶ τὰ μετάρσια δὲ ἐν αὐτῷ πολυπραγμοσύνη τὸν Εὐριπίδην ὁμολογεῖ.

In modern times the discussion was first revived over two centuries ago by Joseph Scaliger, whose conclusion is: ² 'auctor Rhesi vetustissimus, qui sine dubio non est Euripides.'

Since his time the discussion has been vigorously carried on, and almost every one who has given his attention to the study of Euripides, or of the Greek drama in general, has had something to say on the question. In 1863 Frederic Hagenbach, who took the authorship of the Rhesus as the subject of his inaugural dissertation,³ did a service to future investigators by giving ⁴ a full list of those who had discussed the question up to his time, together with a brief summary of their views.

To this dissertation the reader may be referred for fuller particulars. It is enough to say here that while the majority of critics are of the opinion that the play is not the work of Euripides, hardly any two agree as to the author or the time in which he lived. It has

¹ This paper, written in Latin, was accepted in 1885 by the classical faculty of the Cornell University as a dissertation for the degree of Doctor of Philosophy. While the general plan of the dissertation remains unchanged, it has been wholly rewritten, and a number of additions and corrections have been made.

² *Proleg. ad Manilium*, pp. vi. fol.

³ *De Rheso Tragoedia*, Basle, 1863.

⁴ pp. 6, 7, and 51-62.

been ascribed to Sophocles,¹ to the younger Euripides,² to one of the Alexandrine Pleiad,³ and to an obscure and tasteless imitator,⁴ about whose period there is a wide divergence of opinion. One distinguished critic⁵ thought that the many absurdities which he saw in the Rhesus could best be accounted for by supposing that it was a combination of a tragedy and a comedy, intended for the fourth place in a tetralogy, in lieu of a satyric drama. This last view has found only a single supporter.⁶

The opposite view, that our Rhesus was written by Euripides, was ably sustained by Vater⁷ and Hartung,⁸ and is still held by some competent critics.

Hagenbach's dissertation was reviewed favorably by Rauchenstein,⁹ and unfavorably by Schenkel.¹⁰ The question has since been made the subject of special discussion by Menzer,¹¹ who supported Hermann's view; by Albert,¹² who thought the Rhesus a youthful work of Euripides; by Nöldecke,¹³ who merely decides that the drama was not written by any one of the three great tragedians, nor in their time; and by Eysert,¹⁴ who does not attempt to determine the author and date of the play, but only to show that it is not abnormal in its language, and that it is not the work of an imitator.

Views on the date and authorship of the Rhesus have also been pronounced incidentally in histories of Greek literature and works of various kinds dealing with the Greek drama. Such views are more likely to be unbiased, and the present state of the controversy may be shown, and incidentally that the question is still an open one, by quoting three opinions of this kind.

¹ Gruppe, *Ariadne*, pp. vii-x.

² M. Anton. Delrio, *Proleg. in Senecae Tragoedias*, p. xxi.

³ Hermann, *Opuscula*, III. pp. 262-310.

⁴ Hagenbach and others.

⁵ Dindorf, *Euripides*, Ed. Oxon. pp. 560 fol.

⁶ Spengler, *De Rheso Tragoedia*, Program d. gym. z. Düren, 1857.

⁷ *Vindiciae*.

⁸ *Euripides Restitutus*.

⁹ *Jahn's Jahrb. f. Phil.* 89, pp. 569-571.

¹⁰ *Philologus*, XX. p. 484.

¹¹ *De Rheso Tragoedia*, Berlin, 1867.

¹² *De Rheso Tragoedia*, Halle, 1876.

¹³ *De Rhesi fabulae aetate et forma*, Schwerin, 1877.

¹⁴ *Rhesus im Lichte des Eur. Sprachgebrauches*, Böhm. Leipa, 1891.

Bergk in his *Griechische Literaturgeschichte*¹ discusses the matter at some length; his view may be summarized as follows:—

The Rhesus is the work of an imitator of Aeschylus, who lived after the close of the Peloponnesian war, but before the time of Alexander the Great. He has followed his model closely in the language and in the external details, but has missed the Aeschylean spirit. The play does not deserve the excessively severe criticism which has been passed on it. The choruses, especially the beautiful one beginning with v. 527, are deserving of the highest praise.² It must be admitted, however, that the author lacked dramatic power, and that he has not made the most of his subject, which is well adapted to a drama.³ *The play shows not the slightest sign of the style of Euripides.*⁴ It cannot be Alexandrine. The author has been indirectly influenced by Euripides and his school. Bergk's view with regard to the alleged *Σοφόκλειον χαρακτήρα* of the Rhesus had best be quoted in full: '*Von dem Geiste des Sophokles ist hier nichts wahrzunehmen, und wenn uns auch keine von den frühesten Tragödien des Sophokles erhalten ist, so können wir doch zuversichtlich voraussetzen, dass sie des grossen Namens nicht unwürdig waren. Indes enthält jene Bemerkung, richtig verstanden, einen beachtenswerthen Fingerzeig. Sophokles hat in der ersten Periode seiner dichterischen Thätigkeit sich vorzugsweise an Aeschylus angeschlossen und namentlich den Stil jene Meisters sich angeeignet, jedoch in der massvollen Weise, die jedes Werk des Sophokles kennzeichnet. An diese älteren Tragödien des Sophokles mochte der Rhesus hinsichtlich der Behandlung der Sprache erinnern; denn nur diesen Punkt hatten jene Kritiker im Auge.*'

The other side of the question is supported by Christ in his *Griechische Litteraturgeschichte*.⁵ He says: 'Der Rhesus ist nichts anderes als ein *Iliadis carmen diductum in actus*. Die Echtheit der Tragödie ward nach den Didaskalien schon in dem Altertum angezweifelt, in-

¹ Vol. III. pp. 612-619.

² Bergk thinks that this chorus may be derived from an old 'Volkslied.'

³ The opposite view is held by many critics. See especially Beck, *Diatribes*, p. 266.

⁴ P. 615. 'Im Uebrigen hat der Rhesus nicht die entfernteste Aehnlichkeit mit der Weise des Euripides . . . wovon sich nicht die geringste Spur zeigt.'

⁵ In Iwan Müllers *Handbuch*, Vol. VII. pp. 203, 204.

dem die alexandrinischen Kunstrichter in ihr mehr den sophokleischen Character finden wollten. *Das kann sich nun kaum auf etwas anderes als den Mangel an euripideischem Pathos beziehen ; denn von der eigentlichen Kunst des Sophokles lässt sich noch weniger etwas in der Tragödie finden.* Aber dieselbe weicht so sehr von der Art der Medea, der Troades, und aller erhaltenen Tragödien des Euripides ab, dass sie entweder aus ein ganz anderen Kunstperiode unseres Dichters stammt oder überhaupt fälschlich demselben zugeschrieben wurde. Für die Unechtheit sprachen sich Valckenaer und Hermann ; aber dass Chorlieder¹ von so kunstvollem und reichem Versbau wie die des Rhesos sind, in der Zeit der alexandrinischen Pleias, an welchem Hermann dachte, noch gedichtet worden seien, *hat durchaus keine Wahrscheinlichkeit.* Glaubwürdiger ist daher die Ansicht der alten Gramatiker Krates, Dionysodorus, und Parmeniskos,² denen sich in unserer Zeit Vater und Hartung angeschlossen haben, dass der Rhesus ein Jugendstück des Euripides sei. In der That hatte Euripides nach den Didaskalien, wie in der Hypothesis bezeugt ist, einen Rhesus geschrieben, und konnte demnach höchstens nur davon die Rede sein, dass der euripideische Rhesos durch das gleichnamige Stück eines anderen Tragikers verdrängt worden sei. Auf die Jugendzeit des Euripides führt aber auch der politische Hintergrund der erhaltenen Tragödie, der mit der Gründung von Amphipolis am Strymon (um 453) zusammenhängt. Der Rhesos ist also das älteste Stück des Euripides, und aus dem Vergleich desselben mit der Medea kann man ermessen, welche ausserordentliche Fortschritte der Dichter in der Darstellungen der Leidenschaft und der Erregung tragischer Effecte gemacht hat.'

If beside these views we set those of v. Wilamowitz-Moellendorff, we shall see how little the best scholars agree about the Rhesus. In his brilliant monograph entitled *De Rhesi scholiis disputatiuncula* he says :³ 'Constat hanc tragoediam circa Demosthenis aetatem *ex imitatione cum Sophoclis tum Euripidis* ortam esse Athenis.' In his edition of the Herakles⁴ of Euripides he adds : 'Die nachahmung des Sophokles ist in den motiven und der stilisierung der personen nicht minder greifbar als in der diction und namentlich der metrik.'

¹ Cf. Bergk's opinion of the Choruses, p. 63 above.

² As v. Wilamowitz says (p. 71 below) it is not certain that Parmeniscus held this view.

³ p. 12.

⁴ p. 41.

Foreseeing that this view will be assailed, he says :¹ 'Quaesiverit quispiam ex caecis praecipue quorum ferax haec aetas est Sophoclis admiratoribus, quomodo is qui tot et tam gravia vitia Rheso expro- baverit, de Sophoclea cogitare potuerit imitatione.' His answer is that the '*plumbeus imitator*' did not do justice to his model. He has but a slight opinion of the play, which he characterizes as '*mediocris ingenii fetus*.'

That two centuries of discussion have led to so little result, and that there is still an excuse for writing on the question, is due in a great measure to the methods of the disputants. Almost without exception they have begun with a preconceived theory of the author- ship of the play, and have supported their theory without regard to any other possibility. This is especially true of Valckenaer, Beck, Hermann, Gruppe, Vater, and Hartung. These earlier disputants, too, have argued largely on what are called aesthetic grounds ; that is to say, they have attempted to show that the Rhesus is or is not worthy of Euripides. How subjective and how thoroughly unsatis- factory this kind of criticism is, especially when used to support a preconceived view, may be judged from the results. Valckenaer, Hermann, and others of that faction saw absolutely no merit in the drama ; it seemed to them a pitiful piece of patchwork, made of bits taken from Homer and the three great tragedians, put together with- out taste or skill. To Vater and Hartung, on the contrary, it seemed a very meritorious piece of work, and Gruppe reached the climax by regarding the Rhesus as an early work of Sophocles, part of a trilogy with which he won his first dramatic victory ! In supporting these views their authors have heaped on the play the most extravagant praise and the most unreasonable condemnation, and have thus offered opportunities to their adversaries, without strengthening their own cause.

The problem has also been attacked from the point of view of the language and style² and of the metre,³ but no more satisfactory con- clusions have been reached, mainly because no one apparently has begun the investigation with an unbiased mind.

In this paper the non-aesthetic arguments, from the didascaliae and

¹ *De Rhesi Scholiis*, p. 12.

² Hermann, Hagenbach, Menzer, Albert.

³ Spengler, Menzer, and others.

scholia, the language, the metre, and the syntax and style will be mainly relied on, but before taking them up, it will be well to give a brief outline of the play, especially as recent criticism has thrown some light on many of the disputed points.

The action of the drama goes on at night in the plain of Troy before Hector's tent. The Chorus, composed of Trojan guards, comes to arouse Hector. They tell him that the watchfires of the Greeks are still burning, and that the generals are hastening to Agamemnon's tent to take council. As a fair specimen of a good deal of the criticism which is used to show that the Rhesus is unworthy of Euripides, it may be said that the poet is censured for representing the whole guard as going to the general's tent, instead of sending one of their number! Another critic says: 'In Rheso Hectorem excitent vigiles nunciantes frequentissimam congressionem ducum ad tentorium Agamemnonis, quod inventum est ineptissime, nam si tanta sunt acie oculorum vel tam prope a Graecorum castris stationem habent, ut ista tam distincte cernant, vix opus est exploratorem mitti.'

Surely this is to inquire too curiously and to hold the poet too closely to details.

When the guards make their report, Hector at once concludes that the Greeks are intending flight, and proposes an immediate attack on them. The Chorus endeavors to dissuade him, as does Aeneas, who has been aroused by the confusion. Aeneas urges that it is better to allow the army needed rest and to defer the attack until dawn, but in the meantime to send a spy to learn the reason of the disturbance in the Grecian camp. Hector is finally persuaded and calls for a volunteer for this dangerous mission. Dolon offers himself, but demands a substantial reward. Hector offers him successively the privilege of becoming one of Priam's sons-in-law, a large amount of gold, and one of the famous Greek generals as his slave. Dolon refuses them all and demands as his reward the horses of Achilles, and these Hector finally promises him.

Then Dolon explains his plan for disguising himself. He will cover his head and his whole body with a wolf's skin, and running on all fours will enter the Grecian camp without exciting suspicion. When secure from observation he will walk erect. This stratagem, which the Chorus highly commends, has been ridiculed by all who have denied that Euripides wrote our play, and even by most of the

opposite faction. And yet, as v. Wilamowitz-Moellendorf points out,¹ our author follows a tradition which, though different from the Homeric account, was current in the fifth and fourth centuries before Christ. He says: 'Atqui Dolonem re vera indutum pelle lupina τετράπουν μιμήσασθαι λύκου κέλενθον (uti similes insidiae passim de barbaris Americae incolis narrantur) vulgari per quintum quartumque saeculum ferebatur fabula, cuius in litteris quidem nulla praeter hanc tragoediam pervenit ad nos mentio, sed vascula Attica et antiquissima et recentia pictam luculentissime hanc scaenam exhibent.' Some illustrations which fully confirm this statement are given by Schreiber in the *Annali dell' Institut* for 1875.² He mentions thirteen vases which represent the Doloneia, although Vogel³ seems to know of but one, and that too one which follows the Homeric tradition. There can be no question, however, that in the scene depicted by Schreiber in Tav. R. 1, exactly the disguise described by our poet is represented.

After the departure of Dolon a shepherd comes from Mt. Ida, to announce the arrival of Rhesus, the Thracian king. Hector at first refuses to listen to him, and insists on supposing that he has come at this inopportune time to bring news of his flock. When at last the shepherd is allowed to tell his story, he gives a vivid description of the mighty army and wonderful horses of Rhesus. This scene also has been severely criticised. Von Wilamowitz sees in it an indication that the Rhesus is an imitation of Sophocles's lost drama *Pastores*, the points of resemblance being that in the play of Sophocles the scene is laid in the Trojan camp, there is a double plot in the deaths of Protesilaus and Cynus, and finally 'chorum audimus de pecoribus suis multa narrantem.'

After the shepherd has told his story, the Chorus in a beautiful passage celebrates Rhesus, the son of the river Strymon and one of the Muses. Then Rhesus appears and is met by Hector with reproaches for his long delay. Rhesus urges as his excuse a protracted war against the Scythians, saying that as soon as he had finished it he had hastened to the relief of his allies. In a boastful speech he declares that on the morrow he will finish the war which has raged

¹ *De Rhesi Scholiis*, p. 11.

² See especially Tav. R. 1.

³ *Scenen aus Euripides in Vasengemalden*, p. 21.

for ten years with his own army alone. Then he will go with Hector to conquer Greece. Hector, before so boastful, becomes modest in comparison with this new *miles gloriosus*, as Valckenaer calls him, and informs Rhesus that to conquer Greece is not so easy a matter. Rhesus finally consents to let the Trojans take part in the coming battle, but insists that he be placed with his force opposite the bravest of the Greeks.

While Hector accompanies the Thracian to the resting-place assigned him for the night, the guards are relieved. The approach of dawn is described in a charming ode. Of this Patin¹ says: 'On y voit les astres qui s'effacent à l'horizon, les pléiades qui commencent à paraître, la constellation de l'aigle planant au milieu du ciel, la lune illuminant tout de sa lumière: on y entend les plaintes du rossignol aux bords du Simois, la flûte des pasteurs qui déjà mènent leur troupeaux dans les pâturages de l'Ida. Ces souvenirs de la nature et la vie champêtre, ainsi jetés, à la façon d'Homère, parmi les scènes de guerre, ont beaucoup de charme.'² As the Chorus departs it expresses anxiety about Dolon.

Meanwhile Odysseus and Diomedes have made their way into the Trojan camp. When they appear on the scene, we learn from their conversation that they have killed Dolon and have learned from him the pass-word and the position of Hector's tent. They propose to slay Hector, but find him gone. As they are on the point of departing without accomplishing anything more than Dolon's death, Athena appears, to tell them of the arrival of Rhesus, and how they may slay him and carry off his steeds. This they proceed to do, while Athena, in the guise of Aphrodite, reassures Paris, who is hastening to his brother's tent. Paris, Aeneas, and Athena are really not necessary to the action of the drama, and their introduction has been severely criticised. The multiplicity of characters, however, which Bergk³ ascribes to the influence of Euripides and his school, give variety and liveliness to a drama somewhat lacking in action, while the intervention of Athena, as Patin⁴ points out, lends a fatalistic turn to the events which follow.

¹ *Tragiques Grecs*, Vol. III. p. 100.

² Valckenaer, Hermann, and critics of their school saw no such beauties in this passage. It is fair to say, however, that it has been generally admired by all who have not had reasons for refusing to see any merit in the Rhesus.

³ l.c.

⁴ l.c. p. 162.

Meanwhile the guards are aroused, and returning surround the two Grecian heroes, who escape by the coolness of Odysseus and his knowledge of the pass-word. Then the charioteer of Rhesus, severely wounded, enters and informs the guards in a simple and dramatic narrative that the Thracian king has been killed with many of his followers. When Hector appears, the charioteer accuses him of treachery and of the murder of Rhesus, saying that the Greeks could have had no idea of the arrival of the Thracians, and of their position, without supernatural intervention.¹ Hector listens with a patience which seems to most critics excessive, and orders that the charioteer be taken to his house and his wounds attended to.

Then the Muse, the mother of Rhesus, appears with her son's body in her arms,² bewailing his death in a speech which many critics believe adds to the drama the pathos which it otherwise lacks, though others find it only laughable.

After this Hector deplores the death of his ally in simple and noble language, the dawn appears, and an attack on the Greeks is ordered.

One of the things which has been especially censured in the play is the boastfulness of Hector and Rhesus. Others have attempted to justify it, by saying that the author wished to represent the barbarians as despisers of the gods, and as finally visited by their vengeance. This view is examined at length and disposed of by Nöldecke.³ Von Wilamowitz sees in this proof of imitation of Sophocles; he says: ⁴ 'Nihil est quod in Rheso legendo plus taedii moveat quam tumidissima Hectoris et Rhesi gloriatio: at Sophocles consimili artificio barbaros mores pinxerat, nec dubitamus magno poetae bene cedere potuisse, quod in plumbeo imitatore bilem movet.'

Before passing to the non-aesthetic arguments, it may be well to give one or two opinions to offset the flood of condemnation which has been poured on our unlucky author, opinions which are not given to support a theory. Patin⁵ finds the Rhesus beautiful in details, carefully worked out, but lacking in dramatic power, especially in

¹ Patin considers this an ingenious justification of the appearance of Athena on the scene.

² Recalling Aurora and Memnon in the *Psychostasia* of Aeschylus.

³ *De Rhesi fabulae aetate et forma*, pp. 5 fol.

⁴ *De Rhesi Scholiis*, p. 12.

⁵ *l.c.* Vol. III. pp. 178 fol.

pathos.¹ Mahaffy² compares it to Schiller's *Wallenstein* as a picture of camp life. Klein³ considers that in many of its details it is not unworthy of Sophocles; that the scene in which the guards gather round Hector's tent, to intercept the fleeing Odysseus, is *sui generis*, reminding one of a camp scene of Salvator Rosa.

Passing now to more tangible evidence, let us first consider what light is thrown on the question by the arguments and the scholia. In the first argument we are informed that the didascalie recorded a Rhesus of Euripides. The origin and trustworthiness of the didascalie are treated by Boeckh.⁴ Their testimony regarding the Rhesus has never been questioned, and it is generally admitted that Euripides wrote a Rhesus. If our play was not the work of Euripides, it was substituted for his Rhesus, and to that fact undoubtedly owes its preservation. That the substitution was accidental seems clear, for a play deliberately designed to be fraudulently assigned to Euripides would surely not show so many departures from his usual manner. The substitution would seem to have been made before the play came to Alexandria. Certainly the work of one of the Alexandrine Pleiad could not have deceived the grammarians of the time.

The authorship of the first argument is disputed. Kirchoff⁵ maintains that it is all derived from a Δικαιάρχου ὑπόθεσις, such as is prefixed to the *Medea* and the *Alcestis*, but Hagenbach's⁶ view seems more probable. He thinks that the fact that the writer of the arguments cites Dicaearchus especially as authority for the statement that there were two prologues is a proof that the other parts of the argument were not drawn from him. He says: 'Nihil aliud sumere possumus nisi compilatorem appellasse auctores, ubi maximi ponderis erant, non nominasse ubi vel inferioris erant notae, vel omnino eorum nomina evanuerunt.'

The view that the οἱ ἔνιοι of the argument were less known grammarians, though of fine critical sense, is supported by v. Wilamowitz.⁷ From an examination of the scholia he reaches the following conclusion: 'Tenemus igitur extitisse editionem Rhesi κεχιασμένην, extitisse σύγγραμμα explicandis signis scriptum ad demonstrandum spuriam

¹ It may be compared in the latter regard with the *Persians* of Aeschylus.

² *Hist. Greek Lit.*, Vol. I. p. 376.

⁵ *Philologus*, VII. p. 536.

³ *Geschichte d. Dramas*, Vol. I. p. 302.

⁶ *De Rheso Tragoedia*, p. 9.

⁴ C. I. G. Vol. I. p. 350.

⁷ *De Rhesi Scholiis*, p. 11.

eius originem. Nihil est cur huius editionis auctorem post Chr. nat. fuisse credamus, cum ex ipsius Aristarchi discipulis complures commemoret, minorem natu neminem. Deinde alius extitit grammaticus qui in priore commentario novum extruxit refutatis quantum potuit dubitationibus, servato Euripidis nomine . . . talem editionem nullam fuisse contendimus nisi unius Rhesi; scilicet neque est Euripidis haec tragoedia neque antiquitas eadem est credulitas.'

He sees in the argument traces of these same critics, 'quorum alter dubitationem movet, a qua alieni fuerunt Aristophanes, Crates (de Parmenisco dubitari potest), alter satis eam credit refelli e studio astrorum, quod quantas turbas excitasset e scholiis noverat et ex didascaliarum testimonio.' The view of Hagenbach that these *ἔνιοι* must have lived 'aliquot saecula post Alexandrinorum aevum' seems to lack evidence.

The question of the prologue is an important one, for all the plays of Euripides, except the doubtful *Iphigenia at Aulis*, have prologues. Unfortunately the evidence is conflicting. As it is expressly stated in the argument of Aristophanes that the guards speak the prologue, and as the Rhesus is the shortest of all Greek tragedies, it has been maintained that the play has come down to us in a fragmentary state, and that the prologue has been lost. This view has been examined by Menzer,¹ who shows very ingeniously that none of the characters of the Rhesus could have spoken such a prologue. His conclusion is: 'Nullo modo verisimile est intercidisse Rhesi prologum, Euripidis more compositum.' Perhaps, as Hagenbach suggests, the line quoted from Dicaearchus may have been preserved from the lost play of Euripides. The origin of the second prologue seems to be correctly stated in the argument. If this view be accepted, the Rhesus began with an anapaestic system like the *Persians* and the *Suppliants* of Aeschylus. While this must be admitted to be doubtful, the deductions of v. Wilamowitz from the scholia are certainly deserving of consideration. In the light of his arguments the *περὶ τὰ μετάρσια πολυπραγμοσύνη* would seem to be a desperate attempt to defend the view that our play is the Rhesus of Euripides, like that of Crates:² Κράτης ἀγνοεῖν φησι τὸν Εὐριπίδην τὴν περὶ τὰ μετέωρα θεωρίαν, διὰ τὸ νέον ἔτι εἶναι ὅτε τὸν Ῥῆσον ἐδίδασκε.

¹ *De R. T.* pp. 45 fol.

² Scholium on v. 528.

This passage is the only suggestion of ἡ γὰρ τὰ περίφημα πολυπραγμοσύνη.

No light seems to be thrown on the authorship of the Rhesus by the fragments of the *Nykterisia* of Accius, or by the mediaeval *Christus Patiens*, whose author takes fifty lines from the Rhesus.

In taking the language of the Rhesus as the basis of argument, critics have made the same error as in the aesthetic criticism of the play. The indices of Hermann, Hagenbach, and Albert are evidently made to support a preconceived theory. Those which follow have been made on a different plan. An attempt has been made to classify the words and expressions used in the Rhesus without forming any previous opinion, and to get from the indices thus made whatever light is possible. No great reliance must be placed on this argument alone, for in the first place we do not possess all the works of the three great tragedians: and secondly, the occurrence even of an unusual word only in the Rhesus and in Aeschylus, for instance, does not necessarily prove that the writer of the Rhesus borrowed that word from Aeschylus. The uncertainty of this kind of criticism is pointed out by Nauck: "Wäre die Euripideische *Electra* uns nicht erhalten, so würde die Form *ἐκδοχόμενος* als ein höchst gewichtiges Argument für die Unechtheit des Rhesus geltend gemacht werden, und jeder Versuch dieselbe zu beseitigen als misslich erscheinen."

It may be said by way of preface that Hagenbach's indices are not wholly correct: in the list of words which seem to him to show imitation of Sophocles, we find not a few which are found also in Aeschylus, and the same is true of his Euripidean list. Moreover, he gives altogether too much weight to this kind of testimony. His indices are criticised by Albert¹ and Eysler,² and I have examined some of them below.³

The lists of ἀσυνήτιστα and of ἀσυνήτιστα, as Hermann calls those words which are not found in the extant works or fragments of the three great tragedians, are mainly from Hermann and Hagenbach. Just as Hagenbach added to Hermann's list, and Meyer to Hagenbach's, I have found it necessary to add several ἀσυνήτιστα

¹ See *Nauck* p. 170. ² *Opusc.* p. 170. ³ See *Nauck* p. 170.

⁴ See *Nauck* p. 170. ⁵ See *Nauck* p. 170.

⁶ See *Nauck* p. 170.

εἰρημένα¹ and a number of ἀπαξ τραγωδούμενα. A separate list of characteristic expressions² has been made. The other indices are new.³

I. ἀπαξ εἰρημένα.

1. ἄησις. 417.⁴ Albert compares ἄημα, Aesch. Eum. 906; Soph. Aj. 674.
2. ἀμβλώψ. 737. Cf. ἀμβλωπός, Aesch. Eum. 956.
3. ἀνθρωποδαίμων. 971. In this sense.
4. δίβαμος. 215.
5. ἐξαυγής. 304. Albert compares χρυσανγής, Soph. Oed. Col. 685.
6. θοινατήριον. 515. Cf. θοινατήρ, Aesch. Ag. 1503.
7. κακόγαμβρος. 260.
8. καλλιγέφυρος. 349. Albert compares καλλίπρως, Aesch. Ag. 245.
9. καρανοστής. 817. Cf. καρανοστήρ, Aesch. Eum. 186.
10. καρποποιός. 964.
11. κερόδετος. 33. Albert compares χρυσόδετος, Soph. El. 837, and χαλκόδετος, Aesch. Sept. 146.
12. μηνάς. 534.
13. νυκτίβρομος. 552.
14. οἶνοπλάνητος. 363.
15. ὀφειλέτης. 965. Cf. ὀφειλέτης, Soph. Aj. 590.
16. παναμερεύω. 361.
17. πουλυνής. 716.
18. προπότης. 361.
19. προσαύλειος. 273.
20. προταινί. 523.
21. προυξερευνητής. 296. Cf. προυξερευνάω, Eur. Phoe. 92.
22. ρακόδντος. 712. ρακοδύτης occurs in Chrysostom.
23. ταχυβάτας. 134. A. compares ἀβροβάτης, Aesch. Pers. 1073.
24. τετράμοιρος. 4.
25. τευχοφόρος. 3.
26. φυλλόστρωτος. 8. Cf. φυλλοστρώς, [Theocr.] Epigr. III.
27. χρυσόβωλος. 921. A. compares καλλίβωλος, Eur. Or. 1382.
28. χρυσοτευχής. 340. A. compares χρυσοφεγγής, Aesch. Ag. 300.
29. ψαφαρόχροος. 716.

¹ Eysert adds eight ἀπαξ εἰρημένα to Hagenbach's list. It is fair to say that all these appeared in my original list of 1885. I am somewhat indebted to Eysert's valuable monograph in the revision of lists I. and II., but as I was unable to consult it until my paper was in type, I have been unable to give it the consideration it deserves. It is a very important contribution to the subject.

² III.

³ IV.-VIII.

⁴ The following editions have been used: Wecklein's *Aeschylus*, Berlin, 1885; Campbell's *Sophocles*, Oxford, 1871; Nauck's *Euripides*, ed. 3, Leipzig, 1870.

II. ἅπαξ τραγωδούμενα.¹

1. ἀβούλως. 761. The adj. occurs frequently in Sophocles and Euripides.
2. ἀηδονίς. 550.
3. αἶθος. 990.
4. ἀκινδύνως. 588. The adj. occurs Eur. Med. 248.
5. ἀκμάζων. Used of a person. 795. ἀκμάζω occurs in Aesch. Sept. 95, and Choe. 722.
6. ἀναπείρω. 514.
7. ἀπληκτος. 814.
8. ἀποινῶμαι. 177, 466.
9. ἀριστοτόκος. 909.
10. ἀσπαστός. 348.
11. αὐτόρριζος. 288.
12. ἀφυπνίζω. 25.
13. γαπονέω. 75. γαπόνος, Eur. Supp. 420.
14. γερονσία. 401, 936.
15. γεωργέω. 176.
16. δέχθαι. 525.
17. δίβολος. 374.
18. διόπτas. 234. In this sense.
19. δόξα. 780. With the meaning 'vision.'
20. δόρη (= δόρατα) 274.
21. δύομαι. 529.
22. ἐγερτί. 524. Occurs with a different meaning Soph. Antig. 413.
23. ἐδραῖος. 783. In the sense of 'furnishing a seat.'
24. εἰσδρομή. 604.
25. ἐκκέαντες. 97. κέαντες, Aesch. Ag. 840.
26. ἐκτυπέω. 308.
27. ἐκτροπή. 881. In this sense.
28. ἐλευθέριος. 358.
29. ἐντάσσω. 492.²
30. ἐξαπωθίω. 811.
31. ἐξώστης. 322.
32. ἐπιδέξιος. 364.
33. ἐπιθρώσκω. 100.

¹ ἄγρυπνος, which Eysert gives as ἅπαξ τραγωδούμενον, is found in Aesch. Pro. 374. Eysert rejects ἀβούλως because Euripides uses the adjective, but retains ἀκινδύνως where the conditions are the same. He also diminishes the list by rejecting all '*Hom. Reminiscenzen*,' such as μέμμεροι, δέχθαι, etc.

² So the MSS. and Liddell and Scott. Nauck adopts Musgrave's conjecture, ἀντάραι.

34. ἐπίμομος. 327. Occurs in Aesch. Choe. 817, and elsewhere in a different sense.
35. ἐπιχράομαι. 942.
36. εἰδοξέω. 496.
37. εὐσπλαγχνία. 192. A. compares θραυσσπλάχνως, Aesch. Pro. 756.
38. εὐσταθία. 317.
39. κατατόμος. 606.¹
40. κατακούω. 553.
41. κατάντης. 318.
42. κειμήλιον. 654. Used of a person.²
43. κλωπικός. 205, 512.
44. κρυσταλλόπηκτος. 441. κρυσταλλοπήξ, Aesch. Pers. 504.
45. κυβεύω. 446.
46. λεωφόρος. 881.
47. μελοποιός. 550.
48. μελωδία. 923.
49. μεμβλωκός. 629.
50. μέρμερος. 509.
51. μῆμος. 256. Used by Aesch. in a different sense.
52. μυχθισμός. 789.
53. ναυκλήριον. 233.
54. ναύσταθμον. 136, 244, 448, 582, 591, 602, 673.
55. νυκτηγορία.³ 19. Cf. νυκτηγορεῖν, Rh. 89, and νυκτηγορεῖσθαι, Aesch. Sept. 29.
56. παράκαιρος. 830.
57. πελταστής. 311.
58. προκάθηναι. 6.
59. πλάστιγγε. 303. In the sense of 'yoke.' Used in a different sense by Aesch. Choe. 289.
60. πολίαρχος. 382.
61. πρηγής. 797.
62. πρόσδετος. 307.
63. πρόσθιος. 210.
64. πτωχικός. 503.
65. πυρσά (heterogeneous plu.). 97.
66. ῥύμη. 64.

¹ See Eysert, l.c. p. 18.

² So Liddell and Scott (*Greek-English Lexicon* s.v.) and others. This interpretation does not seem certain.

³ Schirlitz (*De Euripide novi sermonis conditore*, Halis, Sax. 1864) considers this ἀπαξ εἰρημένον in this sense.

- 67. σῆμα. 688. In the sense of 'watchword.'
- 68. σήμερον. 683.
- 69. σπανία. 245.¹
- 70. σποράς. 701.
- 71. συναθροίζω. 613.
- 72. συνεμπύκνημι. 489.
- 73. τολυπύω. 744. Cf. ἐκτολυπύω, Aesch. Ag. 1017.
- 74. τρομερός. 36. In this sense.
- 75. ὑδροειδής. 353.
- 76. ὑφίζω. 730.
- 77. φαναῖος. 355.
- 78. φιλόστολις. 158. φιλόπολις, Aesch. Sept. 160.
- 79. χωστός. 414. Cf. πολύχωστος, Aesch. Choe. 350.

While some of the words in these two lists, especially in the latter, ought not to be considered of great weight as evidence, the number of rare words which occur in the *Rhesus* has always been deemed significant, and a weighty argument against the view that the play was written by Euripides. Those who support that view have attempted to diminish the number or to show strong resemblances in form and composition to words which are found in the other tragic writers. Albert² showed that very similar words occur in Aeschylus, Sophocles, and Euripides, but without greatly strengthening his case. Vater made³ an examination of the *Bacchae* of Euripides, with the view of showing that it did not differ from the *Rhesus* in that regard, but could find in a play of 1370 lines (as against 996 in the *Rhesus*) only eight ἄραξ εἰρημῖα, some of which were at least doubtful. The first really scientific examination of the question has been made recently⁴ by Eysert, whose results are most interesting, and in view of the weight which has always been laid on the number of rare words in the *Rhesus*, almost startling. As the result of an extensive lexicographical examination of all the tragedies of Euripides, he finds that while the *Rhesus*, according to his table, has 23⁵ ἄραξ εἰρημῖα, it contains only one-seventh of the 432 ἄραξ εἰρημῖα to be found in all the plays of Euripides. The *Rhesus* he finds to be exceeded in

¹ On this word see Schirón, l.c. p. 28.

² *De R. T.*, pp. 33-39.

³ *Vaterrae*.

⁴ 1892, l.c.

⁵ It will be noted that my list contains 29, and differs in some other particulars from his.

that respect by the *Phoenissae* (40), the *Ion* (36), the *Iph. Tau.* (35), the *Iph. Aul.* (32), and the *Bacchae* (31).¹ In the percentage of *ἄραξ εἰρημένα* to the number of verses in the plays the Rhesus stands higher, though it is surpassed by the *Cyclops* and approached by some of the tragedies. His table is as follows: *Cyclops*, 3.10 %; Rhesus, 2.81; *Iph. T.*, 2.34; *Phoen.*, 2.27; *Bacch.*, 2.23; *Ion*, 2.22; *Herc. F.*, 1.97; *Iph. A.*, 1.96; *Hiket.*, 1.86; *Elect.*, 1.84; *Hel.*, 1.59; *Troad.*, 1.35; *Hipp.*, 1.29; *Orest.*, 1.28; *Hec.*, 1.23; *Andr.*, 0.79; *Heraclid.*, 0.76; *Med.*, 0.63; *Alc.*, 0.60.

In view of these results the argument from the number of rare words in the Rhesus is certainly deprived of much of its weight. On the other hand an examination of the above table of percentages makes it difficult to suppose that the Rhesus was the earliest work of Euripides, and most of the upholders of the Euripidean authorship of the play have admitted their position to be untenable without that hypothesis. Eysert does not take sides on the question of the authorship of the play, although he seems to lean toward the view that it was written by Euripides. His aim is to show that in the number of its rare words the Rhesus does not differ greatly from the other plays, and in this he has certainly succeeded. Even the number of *ἄραξ τραγυδούμενα* in the Rhesus cannot be said to be very significant against the 103 in the *Bacchae*.

Eysert's list of '*Voces Euripideae κατ' ἐξοχήν*' is also interesting, and justifies his claim that the author of the Rhesus was no servile imitator. Whether the presence of eight such words in the Rhesus, out of a list of seventy-four, indicates, as he believes, the Euripidean character of the play may well be doubted. It would seem to indicate that the author of the Rhesus was familiar with the writings of Euripides, but it is not of sufficient weight to offset the arguments against the Euripidean authorship of the play.²

The next list contains some expressions which seem to Hagenbach and Menzer to be peculiar to the Rhesus. Those in division *a*, it seems to me, can be paralleled in the other tragic writers, and I have subjoined some expressions which appear similar. Those in division

¹ It will be remembered that Vater found only 8 *ἀρ. εἰρ.* in the *Bacchae*; Eysert finds 31, and 103 *ἄραξ τραγυδούμενα*!

² See especially Wecklein's review of Eysert's monograph quoted below, p. 82.

δ I have been unable to parallel. To the latter list I have added a few cases. Some of the expressions given by Hagenbach have been transferred to other lists.

III. EXPRESSIONS SAID TO BE PECULIAR TO THE RHESUS.¹

a.

54. αἶρεσθαι φυγὴν. Cf. αἶρονται φυγὴν, Aesch. Pers. 484.
 173. στρατηλάτης νεῶν. Cf. στρατηλάτης νεῶν, Aesch. Eum. 640.
 318. ἔρπει κατάντης ξυμφορὰ πρὸς τάγαθά. Cf. πρὸς τὸν ἔχονθ' ὁ φόβος ἔρπει. Soph. Aj. 157.
 388. θεὸς καταπνέει σε. Cf. θεόθεν καταπνέει πειθᾷ μοι, Aesch. Ag. 107.
 512. ἕξεν κλωπικὰς ἔδρας. Cf. τίνας ποῦ ἔδρας τάσδε μοι θαάξετε; Soph. O. T. 2.
 566. ψόφος στάζει δι' ὧτων.² Cf. στάζει δ' ἐν θ' ὕπνῳ πρὸ καρδίας πόνος. Aesch. Ag. 189.
 875. εἰς σὲ τείνεται. Cf. εἰς τήνδε τείνει φόνον, Eur. Hec. 263.

δ.

30. σφαγίων ἔφοροι.
 31. γυμνήτων μόναρχοι.
 111. νυκτὸς ἐν καταστάσει.
 184. ἐρῶντί γ' ἀντερῆς ἵππων ἐμοί.
 194. ἀριστεύω with the genitive.
 210. βάσιν χερσὶ προσθίαν καθαρμοῦσας.
 217. Ἑρμῆς φηλητῶν ἀναξ.
 254. πεδοστιβῆς σφαγεύς.
 395. διπλοῦς ἀνὴρ.
 487. πέλτην ἐρεῖσαι.
 538. τίς ἐκηρύχθη with the accusative.
 560. εἰσπαίω λόχον.
 568. κλάζει σιδήρου.
 612. πόθεν τέτακται βαρβάρου στρατεύματος;
 787. ἀμύνων θήρας ἐξεγείρομαι πύλοισιν.
 929. πηγαῖαι κόραι.
 932. ἀλκαὶ φιλάρματοι.

While some of the expressions in δ must not be pressed, it seems fair to conclude from the lists already presented that the author of

¹ By 'peculiar to the Rhesus' is meant an expression which is a *δραξ τραγικοῦ* (see p. 72).

² Hagenbach's comment on this expression is 'inaudite dictum.'

the Rhesus aimed at originality in his diction, and that he was not a servile imitator of the three great tragedians, or of any one of them. So far as he was influenced by others, his model appears to have been Aeschylus.

IV. WORDS FOUND ONLY IN THE RHESUS AND IN AESCHYLUS.¹

- | | |
|-----------------------------------|---------------------------------------|
| 1. ἀγός. 29. | ent sense and in the fem. in |
| 2. ἄγρυπνος. 3, 825. | Soph. Aj. 17. |
| 3. ἀδείμαντος. 697. | 13. μάραγμα. 817. |
| 4. ἀντεράω. 184. | 14. μόναρχος. 31. |
| 5. δυσάλιος. 247. | 15. νυκτηγορέω. 89. |
| 6. δυσαΐζω. 724, 805. | 16. ὄργανον, of a musical instrument. |
| 7. ἔτειος. 435. | 922. |
| 8. ἰά. 553. | 17. πολίοχος. 821. |
| 9. ἱππηλάτης. 117. | 18. πρεπόντως. 202. |
| 10. καιρίως. 339. | 19. προπίνω. 405. |
| 11. κότος. 828. | 20. ῥέγκω. ² 785. |
| 12. κώδων. 308. Used in a differ- | 21. σύρδην. 58. |

V. WORDS FOUND ONLY IN AESCHYLUS, SOPHOCLES, AND THE RHESUS.³

- | | |
|------------------------|-------------------------|
| 1. αἶθων. 122. As adj. | 8. πρόσσημαι. 390. |
| 2. ἀμαχος. 456. | 9. ξυναινέω. 172. |
| 3. αὐλών. 112. | 10. φηλήτης. 217. |
| 4. ἐνθηρος. 289. | 11. φρυκτωρία. 55, 128. |
| 5. ἔφοροι. 30. | 12. φυτάλμος. 920. |
| 6. θράσσω. 863. | 13. χαμένη. 8, 852. |
| 7. πανδίκως. 720. | 14. χνύη. 118. |

VI. WORDS FOUND ONLY IN AESCHYLUS, EURIPIDES, AND THE RHESUS.⁴

- | | |
|---------------------|---------------------|
| 1. ἀγκάλη. 948. | 7. ἀνῆσσω. 792. |
| 2. ἄδην. 480. | 8. ἀπαίρω. 143. |
| 3. ἀμνημονίω. 647. | 9. ἀπουσία. 467. |
| 4. ἀναίμακτος. 222. | 10. ἀρείφατος. 124. |
| 5. ἀναίτιος. 828. | 11. ἀρκούντως. 499. |
| 6. ἀνάκτωρ. 516. | 12. αὐθέντης. 873. |

¹ It has been thought best to make lists IV.-VIII. complete, rather than to select those words which seem especially significant. The meaning of course is that the words are found in no *tragedy* except the Rhesus, and the works and fragments of Aeschylus.

² Menzer says (p. 33) that ῥέγκω used of animals is a δρ. τρ.

³ See note to list IV.

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| 13. αὐτανέψιος. 944. | 40. κατόπτῃς. 134, 150, 155, 558, 632. |
| 14. δῦτέω. 668. | 41. κελαδίω. 385. |
| 15. αὐχέω. 452. | 42. κύκνος. 618. |
| 16. βάζω. 719. | 43. λακτίζω. 411. |
| 17. βιαίως. 901. | 44. λέπας. 287, 921. |
| 18. βάλος. 730. | 45. λυπρός, 759, 803. |
| 19. γοργώπης. 7. γοργώπις, Soph.
Aj. 450. | 46. μελάγχμιος. 962. |
| 20. δίνη. 928. | 47. μονούμενος. 871. |
| 21. δίοπος. 741. | 48. μυριάς. 913. |
| 22. δόχμιος. 372. | 49. παιδολέτωρ. 549. |
| 23. δυσεύτερος. 212. | 50. πάνοπλος. 22. |
| 24. δυστυχώς. 961. | 51. πασσαλεύω. 180. |
| 25. ἐκπύθω. 472. | 52. πεδοστιβής. 254, 763. |
| 26. ἐπίφθονος. 334. | 53. πελάθω. 557. ¹ |
| 27. ἐρημῶ. 278. | 54. πέλανος. 430. |
| 28. εὐκλεώς. 758. | 55. πηγαῖος. 929. |
| 29. εὐτυχος. 510. | 56. πλέκω. 834. |
| 30. ζυγυφόρος. 303. | 57. πρευματής. 646. |
| 31. θείνω. 676, 687, 784. | 58. προσεικάζω. 696. |
| 32. θρακτός. 669. | 59. πυργῶ. 122. |
| 33. θούη. 57. | 60. στρατηλάτῃ. 276. |
| 34. θούρος. 492. | 61. σιταίρωμαι. 495. |
| 35. θυμάλῃ. 235. | 62. σινέπτω. 428. |
| 36. ἰάλεμος. 895. | 63. τορῶς. 656. |
| 37. καθεύδω. 643. | 64. τρανῶς. 40. |
| 38. κατακτάς. 605. | 65. τραῦμα. 751. |
| 39. καταπνέω. 388. | 66. ψάλλον. 27. |
| | 67. ψαλμός. 363. |

VII. WORDS FOUND ONLY IN SOPHOCLES AND IN THE RHESUS.²

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|---|---|
| 1. ἀγύρτης. 503, 715. | 10. καταράτῃ. 447. |
| 2. ἀγχετέρωμαι. 426. | 11. καταυλίζεσθαι. 518. |
| 3. δειπάζω. 925, 951. | 12. κατειπάζω. 611, 614. In Eur.
in a different sense. |
| 4. διφρηλατέω. 781. διφρηλάτης.
Aesch. Eum. 156. | 13. κρότημα. 499. |
| 5. εἰσπαίω. 560. | 14. κωδισκόκροτος. 384. |
| 6. ἐπαιτέω. 715. | 15. ὀλοφύρωμαι. 896. |
| 7. εὐβουλος. 105. εὐβούλω.
Aesch. Choe. 692. | 16. πεδίας. 283. |
| 8. ἐσθναός. 771. | 17. ῥανός. 784. |
| 9. κικαυδρία. 814. | 18. ὑπιστοπιδος. 740. |

¹ So the MSS.; Neuck reads πλάθω.² See note to list IV.

VIII. WORDS FOUND ONLY IN EURIPIDES AND THE RHESUS.¹

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|--|--|
| 1. ἄγαμαι. 244. | 32. λάζυμαι. 877. |
| 2. αἰνιγμός. 754. αἰνιγμα in Aesch. and Soph. | 33. μελωδός. 351, 393. |
| 3. ἀκλεῶς. 752, 761. | 34. ναυσιπόρος. 48. |
| 4. ἄμυστις. 419, 438. | 35. νυχεύω. 520. |
| 5. αὐθιγενής. 895. αὐτογενής, Aesch. Supp. 8. | 36. ξιφήρης. 713. |
| 6. βαλιός. 356. | 37. ὀργάς. 282. |
| 7. βοηδρομέω. 333, 412. | 38. ὄρισμα. 437. |
| 8. γυνής. 313. | 39. παιδοποιός. 980. |
| 9. γνύψ. 515. γυνπιάς, Aesch. Supp. 804. | 40. πάμπαν. 855. |
| 10. δέμω. 232. | 41. πεδαίρω. 372. |
| 11. διαπρεπής. 617. | 42. πέλτη (= πελτασται). 410. |
| 12. διῦπετής. 43. | 43. πλημμελής. 858. |
| 13. διφρεύω. 356. | 44. πολύφονος. 62, 465. Cf. πολυφθόρος, Aesch. Pro. 660. |
| 14. δυσθνήσκω. 791. | 45. πολύχορδος. 548. |
| 15. ἐξιάομαι. 872. | 46. πόρπαμα. 442. |
| 16. ἐπιζαρεύω. 441. | 47. πρέσβευμα. 936. |
| 17. ἐπικουρέω. 937, 956. | 48. ραίνω. 73. |
| 18. ἐπτάπορος. 529. Compounds of this kind are common in Aesch. e.g. ἐπτάπυλος, Sept. 150. | 49. σαθρός (λόγος). 639. |
| 19. εὐσελμος. 97. | 50. σκόλοπες. 116. |
| 20. εὐδοξία. 760. Cf. εὐδοξος, Aesch. Choe. 302. | 51. σκύλευμα. 593. |
| 21. εὐνδρος. 927. | 52. στίλβω. 618. |
| 22. ζάχρυσος. 370, 439. Such compounds are common in Aesch. e.g. ζάπυρος, Pro. 1118. | 53. συμπυρώω. 960. |
| 23. καθαρμόζω. 767. | 54. συγκατασκάπτω. 391. |
| 24. καθαρώς. 35. | 55. σύνθημα. 572, 684. |
| 25. παραδοκίω. 144. | 56. τετράπους. 255. Cf. τετρασκελής, Aesch. Pro. 411. |
| 26. καρατομίω. 586. | 57. τοξήρης. 226. |
| 27. κατάσκοπος. 125, 505, 592. | 58. τρίβων. 675. |
| 28. κλώψ. 777. | 59. ὑπάργυρος. 970. |
| 29. κοινωνία. 904. κοινωνός, Aesch. Ag. 1021, and elsewhere. | 60. ὑπασπιστής. Cf. ὑπασπιστήρ, Aesch. Supp. 188. |
| 30. κορύσσω. 933. | 61. φαναί. 943. |
| 31. κυνηγέτης. 325. | 62. φαρέτρα. 979. |
| | 63. φρουρός. 506. |
| | 64. φύσημα. 440. |
| | 65. χάσμα (θηρός), 209. |
| | 66. χόρτος. 771. |
| | 67. χρυσοκάλλητος. 305. Cf. χρυσόκαλλος, Soph. Fr. 68. |

¹ See note to list IV.

It may not be amiss to collect the above results in tabular form.

	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	Total.
Words found in no tragedy except the Rhesus.	29	79							108
Words found in Aeschylus.				21	14	67			102
Words found in Sophocles.					14		18		32
Words found in Euripides.						67		67	134
Words not found in Aeschylus. .	29	79					18	67	193
Words not found in Sophocles. .	29	79		21		67		67	263
Words not found in Euripides. .	29	79		21	14		18		161
Words found only in Aeschylus. .				21					21
Words found only in Sophocles. .							18		18
Words found only in Euripides. .								67	67

In considering this table it should be borne in mind that we possess more plays of Euripides than of Aeschylus and Sophocles together. Remembering this, we are justified in saying that the language of the Rhesus is Aeschylean rather than Euripidean, while the resemblance to the language of Sophocles is slight. There is certainly no servile imitation of any one of the three.

But as Wecklein says,¹ 'Hier muss weniger gezählt als gewogen werden.' The following words, forms, and expressions seem to him to be strong evidence that our Rhesus is not the work of Euripides: —

ἀνθρωποδαίμων. 971.

τείνεσθαι εἰς τι. 875.

προταυνί. 523.

δόρη. 274.

δέχθαι. 525.

μέμβλωκα. 629.

ναῦς ἐπ' Ἀργείων μολεῖν. 150, 155, 221, 589.

ἦσω ναῦς ἐπ' Ἀργείων πόδα. 203.

στείχειν. 86, 138, 201, 291, 296, 299, 582, 594, 628, 992, 993.

πολλοὶ μὲν ἱππῆς, πολλὰ πελταστῶν τέλη, πολλοὶ δ' ἀτράκτων τοξόται, πολὺς δ' ὄχλος γυμνῆς. 311 fol.

¹ *Berl. Phil. Woch.*, 19 Dec. 1891, in a review of Eysert's monograph.

Of these the use of the word *πελτασταί* is, perhaps, the most significant, carrying us down as it apparently does to the reorganization of the Athenian army by Iphicrates in 391 B.C. The word, which first occurs in Thucydides II. 29, does not seem to have been formed before the time of the Peloponnesian war, when the Athenians had Thracian allies. Its use in the Rhesus seems to show that the play was not written before the time of the Peloponnesian war, but not necessarily, as Menzer claims,¹ 'multo post.' Hence it would seem that the Rhesus was not written by Euripides in his youth, and therefore, that it was not written by Euripides at all.

Before leaving the consideration of the language of the Rhesus it will be well to scrutinize carefully the lists of expressions which seemed to Hagenbach to show imitation of Sophocles and of Euripides, and to see whether they will bear investigation. Finally, as the result of the examination so far seems to suggest imitation of Aeschylus, a list of expressions which seem to have been derived from Aeschylus will be given.

IX. EXPRESSIONS WHICH SEEM TO HAGENBACH TO SUGGEST IMITATION OF SOPHOCLES.²

- 55. *σαίνει μ' ἐννυχος φρυκτωρία*. Cf. *παιδός με σαίνει φθόγγος*, Soph. Ant. 1214, but also *σαίνομαι δ' ὑπ' ἐλπίδος*, Aesch. Choe. 193. Note the third example in list X.
- 82. *ἐν τροπῇ δορός*. Cf. *ἐν τροπῇ δορός*, Soph. Aj. 1275, but also *ἐν μάχης τροπῇ*, Aesch. Ag. 1236.
- 145. *προσμίξαι* with the dative. Same construction Soph. Ph. 106, but also Eur. Fr. 903.
- 158. *ἐπώνυμος³ μὲν κάρτα*. Cf. *ὀρθῶς δ' Ὀδυσσεὺς εἰμ' ἐπώνυμος κακοῖς*, Soph. Fr. 877, but also *κάρτα δ' ὦν ἐπώνυμος*, Aesch. Eum. 90, and *ἐπώνυμῳ δὲ κάρτα Πολυνείκει λέγω*, Sept. 645.
- 183. *ψυχὴν προβάλλοντ' ἐν κύβοις δαίμονος*. Cf. *αἰὲ γὰρ εὖ πίπτουσιν οἱ Διὸς κύβοι*, Soph. Fr. 809, but also *ἔργον ἐν κύβοις Ἄρης κρινεῖ*, Aesch. Sept. 401,⁴ and Rh. 446, *ρίπτεις κυβεύων τὸν πρὸς Ἀργεῖους Ἄρην*.

¹ *De R. T.*, p. 53.

² In all cases the parallel first given is Hagenbach's, though in some cases I have quoted more at length than he. Those which follow are my own, though it is more than likely that some, if not all, of the cases have been noticed by others. When no parallel but Hagenbach's is given, I have been unable to find a similar expression.

³ Hagenbach considers *ἐπώνυμος* a Sophoclean word!

⁴ This may well have been a proverbial expression.

329. ἀρκοῦμεν οἱ σώζοντες Ἴλιον πάλαι. Cf. ἀρκέσω θνήσκονσ' ἐγώ, Soph. Ant. 547, but also ἀρκοῦμεν ἡμεῖς οἱ προθνήσκοντες, Eur. Alc. 383.¹
389. παλαιῇ ἡμέρᾳ. Cf. παλαιῇ ἀμέρᾳ, Soph. Aj. 624.²
476. ἡ κάρτα. Cf. ἡ κάρτα, Soph. El. 312. A frequent expression in Aeschylus. See Ag. 597, 1251; Choe. 928; and elsewhere.
690. βοῶν ἐγεργίον. Cf. θρήνον ἐγείρετε, Soph. O. C. 1778. For a metaphorical use of ἐγείρω, cf. ἤγειρεν ἄλλην ἐκδοχὴν πομποῦ πυρός, Aesch. Ag. 311.
732. συμφορὰ βαρεῖα. Cf. βαρεῖαν ξυμφοράν, Soph. Tr. 746, but also βαρεῖά γ' ἄδε συμφορά, Aesch. Pers. 1045.
819. τὸν Ἑκτορα τὸ μηδὲν εἶναι νομίζετε. Cf. ὑμᾶς τὸ μηδὲν ὄντας, Soph. Aj. 1275.
883. Τροίαν ἀνάγει πάλιν εἰς πένθος δαίμων. Cf. ὡς ἡμέρα κλίνει τε κἀνάγει πάλιν ἅπαντα τάνθρώπεια, Soph. Aj. 131.
892. παῖδα τόνδ' ὀρώσ' οἰκτρῶς θανόνθ' ὑπ' ἐχθρῶν. Cf. Soph. El. 102, σοῦ, πάτερ, οὕτως αἰκῶς οἰκτρῶς τε θανόντος.
- 965-6. ὀφειλέτις δέ μοι τοὺς Ὀρφέως τιμῶσα φαίνεσθαι φίλους. Cf. οὐ κάτοιυσθ' ἐγὼ θεοῖς ὡς οὐδὲν ἀρκεῖν εἰμ' ὀφειλέτης ἔτι; Soph. Aj. 589.

In those cases in which an expression is paralleled in both Aeschylus and Sophocles, there is certainly no reason for considering that it shows imitation of Sophocles. It is certainly fairer either to give the earlier poet the credit, or to consider the expression a literary commonplace, which any writer might use without making himself liable to the charge of imitation. The remaining cases, even if we accept such far-fetched comparisons as the one on v. 883, are surely not sufficient to show systematic imitation of Sophocles, much less to justify Hagenbach's charge 'nostrum pariter ex omnibus fabulis hausisse quae opusculo suo intexeret.' The conclusion may fairly be drawn from this list and from the word lists, that the Rhesus shows little resemblance in language and style to the extant works of Sophocles.

¹ This expression from the *Alcestis*, with Rh. 329 as parallel, is quoted by Hagenbach among the expressions which seem to him to show imitation of *Euripides*.

² In this case the parallel is only apparent, for though the words are identical, they are used in very different senses.

X. LIST OF EXPRESSIONS WHICH SEEM TO HAGENBACH TO SUGGEST
IMITATION OF EURIPIDES.¹

6. ὄρθου κεφαλὴν. Cf. ὄρθωσον κάρα, Eur. Herac. 635, ὀρθοῦτε κάρα, Eur. Hipp. 198, ὄρθου πρόσωπον, Eur. Alc. 388.
7. λύσον βλεφάρων γοργωπὸν ἔδραν. Cf. στυγνὴν ὀφρὺν λύσασα, Eur. Hipp. 290.
55. σαίνει μ' ἐννυχος φρυκτωρία.² Cf. οὐ γὰρ με σαίνει θέσφατα, Eur. Ion, 685.
59. φαεινοὶ ἡλίου λαμπτήρες. Cf. φαειναῖς ἡλίου περιπτυχαῖς, Eur. Ion. 1517.
80. πάντ' ἂν φοβηθεῖς ἴσθι, δειμαίνων τόδε. Cf. Eur. Hipp. 519, πάντ' ἂν φοβηθεῖς ἴσθι· δειμαίνεις δὲ τί; ³ but also πάντα δειμαίνειν φιλεῖ, Aesch. Pers. 603.
84. ἀπλοῦς ἐπ' ἐχθροῖς μῦθος ὀπλίζειν χέρα. Cf. ἀπλοῦς ὁ μῦθος τῆς ἀληθείας ἔφν, Eur. Phoe. 469, but also ἀπλοῦς ὁ μῦθος· τήνδε μὲν στείχειν ἔσω, Aesch. Choe. 552.
85. μάλα σπουδῇ ποδός. Cf. καὶ μὲν Ὀδυσσεὺς ἔρχεται σπουδῇ ποδός, Eur. Hec. 216.
90. πυκάζου τεύχεσιν δέμας σίθεν. Cf. κόσμῳ πυκάζου τῶδε, Eur. Herac. 725, and πύκαζε κρατ' ἐμὸν νικηφόρον, Eur. Tro. 353.
91. τί δ' ἔστι; μῶν τις πολέμιων ἀγγέλλεται λόχος; Cf. τί δ' ἔστι τοῦ παρόντος ἐκπλήσσον λόγον; Eur. I. T. 240, and τί δ' ἔστιν, Ἰφιγένεια, καὶνὸν ἐν δόμοις, Eur. I. T. 1160.
105. εἴθ' ἦσθ' ἀνὴρ εὐβουλος, ὥς δρᾶσαι χερί. Cf. εἴθ' ἦσθα δυνατὸς δρᾶν ὅσον πρόθυμος εἶ, Eur. Herac. 731.
122. πεπύργωται θράσει. Cf. ὅς πεπύργωσαι θράσει, Eur. Orest. 1568, but also χῆ μὲν τῇδ' ἐπυργούτο στολῇ, Aesch. Pers. 195.
144. σάλπιγγος αἰδὴν. Cf. σάλπιγγος ἡχήν, Eur. Tro. 1267, but also βοὴν σάλπιγγος, Aesch. Sept. 381.
154. πρὸ γαίης τόνδε κίνδυνον ρίψας. Cf. κίνδυνον ἐξ ἀμυχάνων ρίπτοντες, Eur. Herac. 148, and κίνδυνον μέγαν ρίπτοντες, Eur. Fr. 406. The metaphor is the same as in ἔργον ἐν κύβοις Ἄρης κρινεῖ, Aesch. Sept. 401. See note to this expression in list IX.
168. γαμῆν ἐκ.⁴ Same expression in Eur. Andr. 1279. But cf. the third example in list XI.

¹ See note to list IX.

² Note that Hagenbach gives this expression with a Sophoclean parallel in list IX. It cannot be evidence of imitation of both Sophocles and Euripides.

³ Lachmann suggests that this is a proverbial expression; it seems highly probable.

⁴ There is no significance in such a parallel as this.

178. ἔστι χρυσὸς ἐν δόμοις.¹ Cf. εἴη δ' ἔμοιγε μήτε χρυσὸς ἐν δόμοις, Eur. Med. 542.
186. θούριον γόνον. Cf. θούριος Ἄρης, Eur. Phoe. 240, but also θούριος Ξέρξης, Aesch. Pers. 720 and 756.
201. ἐλθὼν δ' ἐς δόμους ἐφέστιος. Cf. δέξαι δὲ χώρα καὶ δόμοις ἐφέστιον, Eur. Med. 713, but also δόμων ἐφέστιος ἐμῶν, Aesch. Eum. 580.
202. σκευὴ πρεπόντως σῶμ' ἐμὸν καθάψομαι. Cf. ἐν τῷ καθάψασ' ἀμφὶ παιδὶ σώματος; Eur. Ion. 1006.
204. εἴπ' εἴ τιν' ἄλλην ἀντὶ τῆσδ' ἔξεις στολήν. Cf. στολήν δὲ τίνα φῆς ἀμφὶ χρωτ' ἐμὸν βαλεῖν; Eur. Bacch. 830. στολή in the same sense in Aesch. Pers. 195 quoted above on 122.
208. λύκειον ἀμφὶ νῶτον ἄψομαι δορὰν κ.τ.λ. Cf. στολήν τε θηρὸς ἀμφέβαλλε σφ' κάρη λέοντος, ἥπερ αὐτὸς ἐξωπλίζετο, Eur. H. F. 465.
209. χάσμα θηρὸς. Cf. δεινῷ χάσματι θηρὸς, Eur. H. F. 363.
211. τετράπουν μιμήσομαι λύκου κέλευθον. Cf. τετράποδος βάσιν θηρὸς τιθίμενος, Eur. Hec. 1058.
216. ἀλλ' εὖ σ' ὁ Μαΐας παῖς ἐκείσε καὶ πάλιν πέμψειν Ἑρμῆς. Cf. ἀλλά σ' ὁ Μαΐας πομπαῖος ἀναξ πελάσειε δόμοις, Eur. Med. 759, but also ξιλλάβοι δ' ἐνδίκως παῖς ὁ Μαΐας ἐπιφορώτατος, Aesch. Choe. 808, and Ἑρμῆς δ' εὐλόγως συνήγαγεν, Aesch. Sept. 495.
274. μάχης πρὸ χειρῶν καὶ δόρη βαστάζομεν. Cf. δέλτον τε γράφεις τήνδ' ἦν πρὸ χειρῶν ἔτι βαστάξεις, Eur. I. A. 35.
278. ποίας πατρῴας γῆς ἐρημώσας πίδον; Cf. κεί μὴ τὸδ' ἐκλιποῖν' ἐρημώσας πίδον, Eur. Andr. 314, but also τόνδ' ἐρημώσας ὄχον, Aesch. Ag. 1054.
281. λόγον δὲ δις τόσον μ' ἐκούφισας. Cf. λόγον δὲ σε μακροῦ ἀποπαύσω, Eur. Hik. 638.
282. πρὸς Ἰδης ὀργάδας. Cf. πρὸς ὀργάδας, Eur. Bacch. 445.
287. Ἰδαῖον λέπας. Cf. Ἰδαῖον λέπας, Eur. Andr. 295 and Fr. 415, but also πρὸς Κιθαιρώνας λέπας, Aesch. Ag. 310.
287. φόβον παρίσχε. Cf. φόβον παρέσχε, Eur. Hec. 1113, but also πόνον παρασχών, Aesch. Pers. 330, and πένθος παρασχών, Pers. 325.
296. στείχων δ' ἀνακτος προὔξευνητὰς ὁδοῦ. Cf. ὡς ἐν προὔξευνητῳ στίβου,² Eur. Phoe. 92.
323. μέγας πνέων. This reading of Nauck's spoils H.'s parallel with Andr. 189, and Bacch. 640, which he cites.
329. ἀρκοῦμεν οἱ σῶζοντες. Cf. ἀρκοῦμεν ἡμεῖς οἱ προθηήσκοντες σέθεν, Eur. Alc. 383, but Hagenbach himself in his Sophoclean list compares ἀρκέσω θηήσκου' ἐγώ, Soph. Ant. 547.

¹ There is no significance in such a parallel as this.

² There is no significance in this parallel except in the use of *προὔξευνητὰς* and *προὔξευνητῳ*, which has already been noted in list I.

331. σέλας θεοῦ. Cf. θεοῦ σέλας, Eur. Hik. 469, but also Διὸς σέλας, Soph. Oed. Col. 95, and φαίδρον ἄλιον σέλας, Aesch. Eum. 927.
332. πᾶλλ' ἀναστρέφει θεός. Cf. ὁ γὰρ θεὸς πάντ' ἀναστρέφει πάλιν, Eur. Hik. 331.
357. ὦ πατὴρ ὦ Φρυγία. Cf. ὦ κάλλιστον ὦ Κυκλώπιον, Eur. Cycl. 266,¹ but also ὦ πόλις ὦ πατρία, Soph. Phil. 1213.
370. ζαχρύσσον πέλταν. Cf. ζαχρύσου πέλτης ἀναξ, Eur. Alc. 498.
397. τοῦπί σε. The same expression in Eur. I. A. 1557, but not apparently in the same sense.
399. οὐ γάρ τι λέξεις ὡς ἀκλητος ὦν φίλοις. Cf. οὐ μὴν ἐρεῖς γέ μ' ὡς ἀτιμάζων, Eur. Alc. 658.
403. ποῖων δὲ δώρων κόσμον οὐκ ἐπέμψαμεν; Cf. ποῖον δὲ γαίης ἔρκος οὐκ ἀφίγμεθα; Eur. Herac. 441.
409. κατὰ στόμα. Same expression occurs Eur. Herac. 801, but also Aesch. Choe. 571, and Fr. 434.
415. πίστις οὐ σμικρὰ πόλει. Cf. ὄρκους, πίστιν οὐ σμικράν, Eur. Hipp. 1037. According to Stobaeus we should read πίστις in this sense in Aesch. Sept. 54, instead of πίσυς.
419. ἄμυστιν δεξιούμενοι. Cf. ἄμυστιν ἐλκύσας, Eur. Cycl. 417.
421. λέγω κατ' ὄμμα σόν. Cf. κατ' ὄμμ' ἐλθὼν μάχη, Eur. Andr. 1064, and χῶ μὲν κατ' ὄμμα στὰς προσεύχεται θεῶι² Eur. Andr. 1117.
423. εὐθείαν λόγων τέμνων κέλευθον. Cf. οὐρανοῦ τέμνων ὁδόν, Eur. Phoe. 1, and also τίν' ἀμφ' αὐτὰς ἔτι πόρον τέμνω γάμον λυτῆρα; Aesch. Supp. 814.
427. νόστον τὸν πρὸς Ἴλιον. Cf. πρὸς Ἴλιον νόστος, Eur. I. A. 966, and νόστος Ἴλιον πύργους ἔπι, Eur. I. A. 1261. According to the scholiast νόστος is used in the same sense in ἐπὶ φορβῆς νόστον, Soph. Ph. 43.
430. αἵματηρὸς πέλανος. Cf. αἵματηρὸν πέλανον, Eur. Alc. 851. Cf. seventh example in list XI.
438. ὡς σὺ κομπεῖς. Same expression Eur. Orest. 57³. Cf. also τοσόνδε ἐκόμπει μῦθον, Soph. Aj. 770.
446. ῥίπτεις κυβείων τὸν πρὸς Ἀργείους Ἄρην. Cf. ἔτ' αὐτὸν ἄλλα βλήματ' ἐν κύβοις βαλεῖν πέποιθ', Eur. Hik. 330. See on 154 above.
453. τοὺς μέγ' αἰχούνητας. Cf. εἰ σὺ μέγ' αἰχεῖς, Eur. Herac. 353.³
467. μακρὰς ἀπουσίας. Cf. διὰ μακρὰς ἀπουσίας, Eur. I. A. 1172.³
498. ἔστι δ' αἰμυλώτατον κρότημ' Ὀδυσσεύς. Cf. οὐ τὰρ Ὀδυσσεύς ἔστιν αἰμύλος μόνος, Eur. Fr. 709.

¹ H. might have found a closer parallel in Med. 643, ὦ πατρίς, ὦ δώματα.

² The parallel is not exact in either case.

³ There is no significance in such parallels as these.

530. ἐπτάποροι Πλειάδες αἰθέριαι. Cf. ἐγγὺς τῆς ἐπταπόρου Πλειάδος, Eur. I. A. 7, and ἱεὶ δ' ἐφ' ἐπτά Πλειάδων ἔχων δρόμον, Eur. Fr. 779. In the same way Aesch. (Fr. 304) uses ἐπτάροος of the Nile.
580. τί δῆτα δρῶμεν. The same expression Eur. I. T. 1188. τί δῆτα is frequent in Aesch.
596. καρδίαν διειρηγμένοι. Cf. καὶ δρῶν γε λύπη καρδίαν δηχθήσομαι, Eur. Alc. 1100. A common metaphor. Cf. συμφορά δάκνει, Aesch. Pers. 848.
608. δέσποιν' Ἀθάναι, φθέγματος γὰρ ἡσθόμην τοῦ σοῦ συνήθη γῆρυν. Cf. κλύεις γὰρ αὐδὴν καίπερ οὐ παρὼν θεᾶς, Eur. I. T. 1447, and κλύων μὲν αὐδὴν, ὄμμα δ' οὐχ ὄρων τὸ σόν, Eur. Hipp. 86, but also καὶ τᾶλλα πόλλ' ἐπείκασαι δίκαιον ἦν, εἰ μὴ παρόντι φθόγγος ἦν ὁ σημανῶν, Aesch. Supp. 250.
618. ὥστε ποταμίον κύκνου πτερόν. Cf. δὲ αἰθέρος χιονόχρως κύκνου πτερῶ, Eur. Hel. 216.
625. τρίβων καὶ σοφός. Cf. σοφός καὶ τρίβων, Eur. Med. 686.
639. σαθροῖς λόγοισιν ἀμείβομαι. Cf. τοὺς λόγους εἶναι σαθροῦς, Eur. Hec. 1190. A common metaphor. Cf. Pindar N. 8, 59, σαθρὸς κύδος.
647. οὐδ' ἀμνημονῶ τιμῆς. Cf. κακῶν γὰρ τῶν τότε οὐκ ἀμνημονῶ, Eur. I. T. 361.
693. τίς ἀνδρῶν ὁ βάς; Cf. use of ὁ in Ἔρωσ ὁ κατ' ὀμμάτων εἰς πόθον. Eur. Hipp. 525.
701. νησιώτης σποράδα κέκτῃται βίον; This reading of Nauck's spoils H.'s parallel with Eur. Herac. 84.
721. ἐπὶ γὰν Φρυγῶν ποδὸς ἔχνος βαλεῖν. Cf. κατ' Ἀργος ἔχνος θείην ποδός, Eur. I. T. 752.¹
730. ἴσως γὰρ εἰς βάλον τις ἔρχεται. Cf. ἀνὴρ εἰς βάλον καθίσταται, Eur. Bacch. 848.²
732. συμφορὰ βιρεῖα. Cf. βαρεῖα συμφορὰ πεπληγμένος, Eur. Alc. 856. See note on this expression in list IX.
751. πῶς ἂν ὀλοίμην; Same expression in Eur. Alc. 864, and Med. 97.³
756. κακῶς πέπρακται. Cf. same expression in Eur. Med. 364, but also κακῶς δὲ πράξας, Aesch. Pers. 216, and εὖ πέπρακται, Aesch. Ag. 556.⁴
772. ἀφθόνῳ χειρί. Cf. same expression Eur. Med. 612.⁴

¹ These expressions are not parallel. Here, as elsewhere, the author of the Rhesus shows his originality in coining new phrases.

² This seems likely to have been a proverbial expression. If not, the parallel is striking, especially as Schwartz (*De metaphoris e mari et re navali petitis quaestiones Euripideae*, Keil, 1878, p. 20) says that this metaphor is not found in Aesch. or Soph.

³ There is no significance in this.

⁴ There can be no significance in such a parallel, unless one believes that our author literally made his play a piece of patchwork.

796. βαθείαν ἄλοκα τραύματος. Cf. δορός ταχείαν ἄλοκα, Eur. H. F. 164, but also ὄνυχος ἄλοκι νεστόμα, Aesch. Choe. 25. βαθείαν ἄλοκα is used metaphorically in Aesch. Sept. 580.
796. φασγάνου πληγῆς. Cf. φασγάνων πληγῆς, Eur. Andr. 1074, but also πληγῇ δορός, Aesch. Pers. 307.
803. εἰκάσαι πάρεστι. Cf. same expression, Eur. Hel. 421,¹ but also οὐκ ἔχοιμ' ἂν εἰκάσαι, Aesch. Choe. 516.
834. πλέκων λόγους. Cf. ποίας μηχανὰς πλέκουσιν; Eur. Andr. 66, but also δόλον πλέκει, Aesch. Choe. 219.
855. τὸ πάμπαν. Cf. same expression, Eur. Fr. 196.
870. ἄλις τῶν τεθνηκότων. Cf. same expression, Eur. Hec. 278, but also ἄλις λεληγμένων, Aesch. Eum. 678, and πημονῆς δ' ἄλις, Aesch. Ag. 1656.
877. λάζυσθ' ἄγοντες εἰς δόμους ἐμούς . . . πορσύνετε. Cf. λάζυσθε τήνδε κείς δόμους κομίζετε, Eur. Phoe. 1660.¹
879. ὑμᾶς δ' ἰόντας τοῖσιν ἐν τείχει χρεὼν Πριάμῳ τε καὶ γέρονσι σημήναι νεκρὸν θάπτειν κελεύειν. Cf. σημαίνειν οὐ ταῦρον ἀλλὰ παρθένον σφάζει, Eur. Herac. 489, but also Ἀγαμέμνονος γυναικὶ σημαῖν τορῶς, εὐνῆς ἐπαντείλασαν . . . ἐπορθιάζειν, Aesch. Ag. 26.
904. γένους κοινωνίαν. Cf. παίδων κοινωνίαν, Eur. Phoe. 16.²
949. σφισσὶν δ' ἄλλον οὐκ ἐπάξομαι. Cf. μάντιν οὐχ ἕτερον ἄξομαι, Eur. H. F. 912.³
974. πένθος οἶσω. Cf. οἶσω δὲ πένθος, Eur. Alc. 336, but also πημονὰς φέρειν, Aesch. Pers. 296.
974. ῥῆον οἶσω. Cf. ῥῆον οἶσεις, Eur. Hipp. 205,³ but also φέρειν ὡς ῥῆστα, Aesch. Pro. 104.
980. ὦ παιδοποιοὶ συμφοραί, πόνοι βροτῶν, κ.τ.λ. Cf. ζηλῶ δ' ἀγάμους ἀτέκνους τε βροτῶν, Eur. Alc. 882, δεινὸν τὸ τίκτειν καὶ φέρει φίλτρον μέγα, Eur. I. A. 917, δεινὸν γυναιξὶν αἱ δι' ὠδίνων γοναί, Eur. Phoe. 355.³

In general the same criticism of Hagenbach's method may be made as in the case of the expressions in list IX. There remain, however, in this list of Euripidean expressions more cases in which no other parallel than his can be given. Is this evidence of deliberate imitation of Euripides? To my mind it is not. In the first place many of the parallels are of no significance, as has already been

¹ There can be nothing significant in such a parallel as this.

² See note 4, p. 88.

³ It seems to me that these expressions are not parallel. The idea in the passage from the Rhesus is quite a different one.

pointed out, others are far-fetched, and the number of those which show such imitation or adaptation as is shown in the sixth example in list XI. are very few. Even were they more numerous, they would not prove our author to be a servile imitator of Euripides. Euripides himself is justly charged by Aristophanes¹ with diligently reading and imitating Aeschylus and other poets, and Schirlitz² gives a list of writers who 'partim consulto partim fortuito' have drawn on Euripides for words and expressions, without laying themselves open to the charge of being servile imitators. The judgment of Schirlitz on the Rhesus is interesting: 'Praeterea examinavi Rhesi fabulam: quam qui composuit, tum⁴ Aeschylea nonnulla, Sophoclea, Euripidea recepit nusquam praeterea obvia, tum ipse nove dictorum partimque audacter fuit artifex.'

This judgment is supported by our word lists. It seems fair to conclude that there is no evidence in the language and style of the Rhesus strong enough to prove that Euripides wrote the play, or that its author was a servile imitator. On the other hand, this last list, added to the other evidence, makes it probable that the author of the Rhesus was familiar with all the works of Euripides, and hence lived after his time.

In considering the following list of Aeschylean expressions, the reader should remember that many expressions which seem to have been derived from Aeschylus have already been cited.

XI. LIST OF EXPRESSIONS WHICH SUGGEST IMITATION OF AESCHYLUS.

22. αὐτὰρ πάντοδ' ἀντίχρηται. Cf. ἀντίχρηται χροσίων, Aesch. Ag. 1541.
103. κέρδις ἐπὶς ἔργῳ τῷ χαίρει τινα δαίμων. Cf. αὐτὸς κέρδις κέρδις ἄλλο τιναίει, Aesch. Sept. 424.
168. οὐκ εἰς ἐμὴν μούνην χαίρει θεῶν. Cf. τὸ ἐπὶοῦς καὶ ἐμὸν δαίμονα μούνη, Aesch. Pta. 916.
172. αὐτὸς ἄνδρα γ' αἰεὶς ἀφίειν παῖσι. θεῶν αἰὲρ παύσεται πρὸς δαίμονι. Cf. θεῶν ἄνδρα πάντα τοῖς καὶ Ἑλλὰς δαίμων ἐκαστοῖ-
λεων, Aesch. Ag. 552.
255. δρῶν γέρον. Same expression in Aesch. Supp. 577.

¹ *Athen. dea. 119a*

² *l.c. p. 2*

³ *l.c. p. 2* ⁴ *l.c. p. 2* ⁵ *l.c. p. 2* ⁶ *l.c. p. 2*

⁷ *l.c. p. 2* ⁸ *l.c. p. 2*

308. παλλοῖσι σὺν κώδωσιν ἐκτύπει φόβον. Cf. χαλκήλατοι κλάζουσι
κώδωνες φόβον, Aesch. Sept. 373.
430. αἱματηρὸς πέλανος. Cf. πέλανος αἱματοσφαγῆς, Aesch. Pers. 818.
514. ἀμπεύρας ῥάχιν. Cf. ὑπὸ ῥάχιν παγόντες, Aesch. Eum. 190.
934. ἔστυ κέλσαι. Cf. κέλσαι γαῖαν, Aesch. Supp. 15.

Most of these expressions are not of great weight. They certainly do not indicate servile imitation of Aeschylus. The parallel in 308, as has been said, is striking, and all the evidence thus far supports the view that if our author took any one of the tragedians as his model, that one was Aeschylus.

The metrical structure of the Rhesus has been so thoroughly worked over that nothing more can be done than to give a summary of the conclusions which have been reached. It is generally agreed the metre is such, with regard to the resolution of long syllables, as was usual before the 89th Olympiad. Although agreeing on this point, Vater and Hermann draw different conclusions from it. Vater contends that the Rhesus was therefore written before that date, a view which Spengler¹ supports. Hermann however says: ² 'Quoniam numeri sunt quales ante Olympiadem LXXXIX, cetera autem qualia nec ante illam Olympiadem nec proximis post eam temporibus scripta esse credibile videtur, *multo recentiore esse fabulam contendo numeris ad optima exempla conformatis.*' Lachmann³ sees no signs of imitation of Sophocles or Euripides, but of Aeschylus. The metre, however, he thinks corresponds to that of Sophocles and Euripides at their best.

The case is well summed up by v. Wilamowitz: ⁴ 'In anapaestis τὸν Σοφόκλειον ὑποφαίνει χαρακτήρα scriptor Rhesi, in senariis vero ne antilabas quidem admittit (quas in trochaicis tetrametris habet 686 sqq.) nedum laxiori indulgeat disciplinae. Docemur igitur hac quoque in re superstitionibus etiamtum Sophocle Euripideque sensim relaxatum esse veteris tragoediae severitatem, duce ac principe in numeris Sophocle, in rerum tractatione Euripide, a duum virorum magnorum exemplo cum aequales pependisse tum eos qui proxime sequerentur (Agathonem, Critiam, Chaeremonem, Carcinum dico; de ceteris parum constat) at fuisse tempus quo Athenienses diffu-

¹ *De Rheso Tragoedia*, p. 12.

² *De Choricis systematis trag. graec.*, p. 116.

³ *l.c.* p. 280.

⁴ *Analecta Euripidea*, p. 198.

levitatis taederet; rediisse igitur quantum possent ad antiquiora exempla; atque suspicare licet hac ex causa Theodectae gloriam non minimam promanasse. Cuius severioris Musae unum poetam inlustravit Meinekius Moschionem, cum doceret eum ab omni pede trisyllabo in senariis cavisse; mediocris ingenii fetus at consimili subtilitatis amore commendati extat Rhesus, saeculo quarto exeunte haud dubie Athenis scripta.'

It will be seen that Hermann and v. Wilamowitz substantially agree, except that while the latter assigns the Rhesus to the end of the fourth century, the former attributes it to an Alexandrine writer. The principal argument against the latter view is the number of the choral passages. We know that the Alexandrine writers so subordinated the chorus that Lycophron in his *Cassandra* dispensed with it altogether. In our play the chorus forms an essential part of the play, and the choral passages are marked by a simplicity and beauty which does not suggest Alexandria.

A line of argument which has been wholly neglected in all special dissertations on the Rhesus, but has been touched on incidentally by writers on the grammar of Euripides, consists of deductions from syntactical peculiarities. Evidence of this kind seems especially valuable; unfortunately, however, it is difficult to collect. Some of these writers have left the Rhesus out of consideration altogether as non-Euripidean, and in the other cases it is difficult to collect and classify the scattered references. Such material as I have been able to gather is given below.

Tycho Mommsen,¹ in examining the use of *οὐκ* and of *περὶ* with the genitive in Euripides, finds the latter construction more frequent in Euripides than in the other tragedians. Of the Rhesus he says: ² 'Der Rhesus hat von allem am wenigsten *περὶ* c. gen. und verräth sich auch dadurch als unecht.' He continues: 'Denn die Zeit der ersten Alexandriner verwarf diese Construction wieder fast vollständig. Hiernach zu urtheilen könnte der *Vl.* des Rhesus mit Lycophron, Apollonius Rhodius, Kallimachos, Leonidas von Tarent gleichzeitig gewesen sein.'

Harnsen³ says: 'Multo vero rarius quam adiectivum invenitur

¹ *Programm des Gymn. v. M. zu Frankfurt a. M.*

² p. 5.

³ *Ueber die Construction des Rhesus*, p. 11.

genitivus post praepositionem collocatus. . . . Rhesus hoc in re longe recedit ab usu dicendi Euripideo in quo quidem inveniuntur octo huiusmodi exempla.¹ Further on, speaking of anastrophe, he says: ² 'Inter Euripidis singulas fabulas hac in re nullum fere discrimen est; tantum id commemoratione dignum est, Rhesum fabulam multo minorem exemplorum numerum praebere, quam genuinas fabulas Euripidis. Sunt enim in Rheso tres loci (72, 397, 930), genuinae fabulae vero singulae octo minimum exempla continent ut Alc., vel novem ut Heracl., vel tredecim ut Cyclops, quamquam multo brevior haec fabula est ceteris.'

Tachan,³ speaking of the use of the infinitive with final force, says: 'Quam clarissime elucebit, id quod supra iam monui, exemplorum copiam eo maiorem fieri quo recentiore tempore scriptae sunt fabulae.' After stating the principle on which his infinitives are selected,⁴ excluding such cases as the infinitive with *δίδωμι* and *φοβέσθαι*, *δεινὸς λέγειν*, *καὶρὸς ἀκούσαι*, etc., he gives a table, from which the following selections are interesting: —

	All cases.	ὥς, ὅπως, ἵνα, μή.	Participle.	Infinitive.
Alcestis, 1162.	13	8	2	3
Medea, 1419.	21	16	3	2
Hippolytus, 1466.	24	19	2	3
Electra, 1359.	44	26	10	8
Herc. 1428.	41	29	6	6
Phoe. 1766.	43	25	13	5
Orest. 1693.	41	34	3	4
Rhesus, 996.	25	8	9	8

¹ 150, 155, 203, 221, 471, 502, 598, 660.

² p. 25.

³ *De enuntiationum finalium apud Eurip. ratione atque usu*, p. 72.

⁴ 'Eos tantum commemorabo infinitivos qui re vera pro enuntiatione finali extant.'

Tietzel¹ shows no important variation in the Rhesus from the plays of Euripides. He accepts the Rhesus as written by Euripides, and assigns it to the years 445-442 B.C.

Professor Goodwin,² speaking of the independent clause with $\mu\eta$ or $\mu\eta$ $\sigma\upsilon$ expressing desire to avert an object of fear, notes that after Homer we find no examples of the independent clause either with $\mu\eta$ or with $\mu\eta$ $\sigma\upsilon$ until Euripides, who has three cases of the former and one of the latter.³ An example with $\mu\eta$ $\sigma\upsilon$ occurs in the Rhesus.⁴ Cases of this kind are so rare that the coincidence in usage must be admitted to be striking. It is possible that the author of the Rhesus followed Homer directly, whom he has followed in other respects.⁵ It is perhaps more reasonable, however, to admit that he followed Euripides.

Speaking of the use of $\pi\rho\acute{o}$ with the indicative in poetry, Professor Goodwin⁶ notes in Aeschylus⁷ one example, after a negative; in Sophocles one,⁸ after an affirmative; in Euripides five,⁹ all after affirmatives; while the Rhesus has two.¹⁰

This last coincidence is very striking, for unless our author is here influenced by Pindar, who has three cases, he is certainly following Euripides. Imitation of Pindar seems unlikely, since neither of the cases is in a lyric passage.

From these illustrations it may be seen that this field is a promising one. The examples are not selected, but are all that I have been able to collect. It will be seen that three of the six give evidence against the view that Euripides wrote the play, two give equally strong

¹ *De Com. antiquioribus*, non Euripideis.

² *Greek Manus and Tenses*, 204.

³ Alc. 315, Crest. 770, H. F. 1300, Tru. 98a, of which the last is with $\mu\eta$ $\sigma\upsilon$.

⁴ 115.

⁵ Note the 'Hom. Reminiscences' of Elvert (see p. 74 of this paper) *δῆλός*, *σφῆλαινα*, etc.

⁶ *Manus and Tenses*, 253. He classes the Rhesus in this note among the plays of Euripides, but from the language of the other note it would seem that it is rather for convenience than because he looks on the Rhesus as the work of Euripides.

⁷ Pers. 470.

⁸ *Cl. T.* 775.

⁹ And. 1145, J. A. 480, Med. 1175, Hec. 152, Alc. 182. In the second and third examples a negative is implied.

¹⁰ 204, 508.

evidence on the other side, while the other throws no light on the subject at all. Taken alone the last two examples are strong arguments for the view that Euripides was the author of our play. Taken in connection with the other evidence, they seem merely to show Euripidean influence.

After this presentation of the evidence, it may be well to examine all the hypotheses and possibilities, and to see what conclusion can be reached. In the first place, was the play written by Aeschylus or in his time? Is there any sign of the influence of Aeschylus? To the latter question the answer must be in the affirmative. The number of unusual words, many of which seem to be suggested by Aeschylean words, the anapaestic beginning and the absence of a prologue, the close connexion of the chorus with the action of the play, the number of words and expressions which may be traced to Aeschylus, make any other view unreasonable.

That the play was actually written by Aeschylus has been maintained by no one. That it was written in his time might be inferred from the language of Scaliger¹ and Lachmann.² It will be shown below that so early a date seems impossible.³

Next we may ask the same questions about Sophocles. That the Rhesus was written by Sophocles was maintained, as has been said,⁴ by Gruppe; that it shows imitation of Sophocles, by v. Wilamowitz.⁵ The answer to the former is the same as to the corresponding question about Aeschylus. The latter is a more difficult question. The comparison which v. Wilamowitz makes with the *Pastores*⁶ does not seem convincing, and the argument which he derives from the metre⁷ cannot be held to be conclusive evidence of imitation of Sophocles. On the other hand, the examination of the words and expressions which Hagenbach regards as Sophoclean,⁸ taken in connection with the large number of words which do not occur in Sophocles at all,⁹ seems to show that Christ's statement is hardly

¹ See p. 61.

² *De choricis systematis trag. graec.*, p. 116.

³ Cf. also the remarks on *πενταστίλ* and on the metre pp. 83 and 91 above.

⁴ See p. 62.

⁵ See p. 64.

⁶ See p. 67.

⁷ See p. 91.

⁸ pp. 83 and 84.

⁹ See p. 82, and Hagenb., *De. R. T.*, p. 30. It should be noted that a few of the words cited by Hagenbach are found in Sophocles; *χαμείνη*, for instance, appears in his own list of Sophoclean words.

too strong. There are certainly no signs of direct imitation of Sophocles.

Was Euripides the author of our play? Are there signs of imitation of Euripides? To the latter question the answer must be in the affirmative.

The answer to the former question is made easier by the fact that all those who now support that view admit that if Euripides wrote our play, it was his earliest work. Even they¹ acknowledge that there is a great difference between the Rhesus and the later plays of Euripides. On this point Hermann's remark,² though not conclusive, is significant: 'Mutat profecto aliquid aetas, facitque saepe ut quis alius videtur vir factus quam adulescens fuit; at non mutantur omnia, sed est etiam quod sibi constet, manentque eiusdem ingeni vestigia.'

But there are more tangible proofs that the play could not have been written so early. The list of words and expressions given by Wecklein,³ the fact that the action of the play demands four actors,⁴ and the evidence that the author of the Rhesus was acquainted with the later plays of Euripides,⁵ seem very strong arguments. That the play was not the work of Euripides, though perhaps not necessarily that it was later than his time, is shown by other evidence. First, by the apparent lack of a prologue.⁶ Hartung made so much of this as to say: 'Aut Euripidem Rhesi auctorem esse negandum aut prooemio hanc fabulum instructam esse credendum.' Then he betrays himself into the hands of his adversaries by failing utterly to prove the former existence of a prologue by an examination of the fragments of the *Nivægeria* of Accius. Next the arguments from the first three cases cited in the examination of the syntax⁷ seem to be of some weight. And finally we can hardly believe that Aristophanes would have missed the opportunity of ridiculing a youthful effusion of Euripides.

The idea of Dindorf, that the Rhesus was written for the fourth place in a tetralogy, which Bergk characterizes as '*ganz unglücklich*,' may readily be answered by aesthetic arguments, for it is evident that the Rhesus has not the slightest resemblance to the extant works of

¹ See Christ's remark, p. 203.

² l. c., p. 274.

³ p. 82.

⁴ This is generally admitted and seems certain.

⁵ See list X.

⁶ See p. 71.

⁷ *Eur. Rest.*, p. 13.

⁸ p. 94 39.

that kind. More conclusive is the argument from the metre, and perhaps Bergk's suggestion, that the conclusion of the *Rhesus* suggests that it was followed by another play, deserves consideration.

Was the play the work of a servile imitator? Reasons for answering this question in the negative have already been given.¹ The *Rhesus* with its many departures in language and style from the normal Greek tragedy, and with its anapaestic beginning, may be the work of an imitator of Aeschylus, but hardly of a '*plumbeus imitator*' of Euripides and Sophocles.

Was it then written by an Alexandrine, one of the famous Pleiad? Aesthetic arguments against this view might be multiplied. Cruttwell says: ² 'The drama could find no place at Alexandria. Only recondite legend and frigid declamation, almost unintelligible from the rare and obsolete words with which they were crowded, were sent forth under the name of plays.' This certainly does not apply to the *Rhesus*.³ Moreover, all the evidence indicates that if our *Rhesus* was substituted for a play of the same name written by Euripides, the substitution must have taken place before the play reached Alexandria.⁴ The argument from the position of the chorus⁵ also deserves attention.

After this consideration of the hypotheses, the following conclusions may be reached. Our *Rhesus* is not the work of Euripides. It was written by an Athenian who lived between the end of the Peloponnesian war and the time of Demosthenes, who made a well-meant but not wholly successful attempt to write a play of the old school, strict in its metrical structure, and avoiding the peculiarities of the school of Euripides. He naturally took Aeschylus as his model. Being familiar with the plays of Sophocles and Euripides, he consciously or unconsciously followed them somewhat, especially the latter, which probably set the fashion in his time. He had more poetic than dramatic ability.

¹ pp. 82, 84, 89, 90, 91.

² *Hist. Rom. Lit.*, p. 220.

³ Especially since Eysert has pointed out that the *Rhesus* is not greatly exceeded in its number of rare words by some of the plays of Euripides.

⁴ See p. 61.

⁵ p. 92.

THE USE OF *HERCLE* (MEHERCLE), *EDEPOL* (POL), *ECASTOR* (MECASTOR) BY PLAUTUS AND TERENCE.

BY FRANK W. NICOLSON.

I. COMPARISON OF THE USE OF THE WORDS *in general*.

	<i>Hercle.</i>	<i>Mehercle.</i>	<i>Edepol.</i>	<i>Pol.</i>	<i>Ecastor.</i>	<i>Mecastor.</i>	
<i>Plautus</i>	639	3	356	250	101	17	(=1366
<i>Terence</i>	<u>96</u>	<u>2</u>	<u>22</u>	<u>55</u>	<u>5</u>	<u>2</u>	(= 182
	735	+ 5	378	+ 305	106	+ 19	(=1548

Grand total of all cases, 1548.

Plautus uses these words 1366 times in 20 plays (20,888 lines).

Terence uses these words 182 times in 6 plays (6,074 lines).

i.e. *Plautus* averages 66.3 to a play, or 1 in $15\frac{1}{2}$ lines.

Terence averages 30.3 to a play, or 1 in 33 lines.

Ratio of *Plautus* to *Terence* more than 2 : 1.

II. COMPARISON OF THE USE OF THE WORDS *in particular*.

	<i>Hercle</i> (Mehercle).	<i>Edepol</i> (Pol).	<i>Ecastor</i> (Mecastor).
<i>Plautus</i>	642	606	118
<i>Terence</i>	98	77	7

<i>i.e.</i>	<i>Hercle.</i>	<i>Edepol</i> (Pol).	<i>Ecastor.</i>
<i>Plautus</i>	5.432	: 5.135	: 1
<i>Terence</i>	14	: 11	: 1

III. COMPARISON OF THE USE OF *Forms* OF THE SAME WORD.

	<i>Hercle.</i>	<i>Mehercle.</i>	<i>Edepol.</i>	<i>Pol.</i>	<i>Ecastor.</i>	<i>Mecastor.</i>
<i>Plautus</i>	639	3	356	250	101	17
[<i>i.e.</i> 213 : 1			1.425	: 1	6	: 1]
<i>Terence</i>	96	2	22	55	5	2
[<i>i.e.</i> 48 : 1			1	: 2.5	2.5	: 1]

i.e. *Plautus* prefers form *Edepol* to *Pol* in ratio 1.5 : 1.

Terence prefers form *Pol* to *Edepol* in ratio 2.5 : 1.

NOTE. — In both poets, women prefer the form *Pol* to *Edepol* (*Plautus*, 81 : 27, *i.e.* 3 : 1; *Terence*, 46 : 10, *i.e.* 4.6 : 1); while men prefer the form *Edepol* to *Pol* (*Plautus*, 329 : 169, *i.e.* 2 : 1; *Terence*, 12 : 9, *i.e.* 1.3 : 1). See § VIII., Table 3, below.

IV. THE USE OF THESE WORDS BY MEN AND WOMEN DISTINGUISHED.

(Me)hercle.

A. (ME)HERCLE is used altogether by *men* in *Plautus* and *Terence*.

NOTE. — There are *four* possible exceptions to this rule; cases where, according to the Mss., *hercle* is used by *women*. These have all been emended by various editors, to conform to the general rule, as laid down by Gellius, *Noct. Att.* XI. 6.

These cases are the following : —

1. *Plaut. Casina* 982. *Ritschl* and *Ussing* both give the speech "Haud mentire hercle; nam pa. . ." to a woman, the former to *Clavstrata*, the latter to *Myrrhina*. The passage is very corrupt; the *hercle* of the other Mss. is indecipherable in the Ambrosian, though the space would admit it. The state of the text also makes it doubtful as to the persons to whom this and the two preceding speeches should be referred. Several of the Mss., including the Ambrosian, do not separate this speech from the *Egrot* just preceding. The *Delphin* Edition gives the words "haud mentire hercle, etc." to *Olympia*. So *Dissakle*.

2. *Plaut. Cistell.* 50. *Gymnasium*. "Equidem hercle addam operam sedulo." Emended by *Seyffert* (*Stud.* p. 15). "*hanc* addam, etc."

3. *Plaut. Merc.* 719. *Dorippus*. "Cupio hercle scire: sed tu me temptas sciens." Bothe gives the first part to *Lysimachus*, and the last to *Dorippus* (reading also *scir* for *sed*). *Ussing* brackets the line as unsuited to the context. *Weise* retains the line, considering this use of *hercle* a fault of the poet, and as tending among other things to show that the play was not written by *Plautus*.

4. *Plaut. Trucul.* 210. *Astaphium*. "Ha! Ha! (h)eracle quierit." This is the reading of most of the Mss. The Ambrosian, however, has "Ha requirit." So *Studemund*.

(M)ecastor.

B. (M)ECASTOR is used altogether by *women* in Plautus and Terence.

NOTE. — There are *two* possible exceptions to this rule, as follows :

1. Plaut. *Asin.* 930, where the Mss. give the speech "Ecastor qui, etc." to *Argyrippus*. Given to *Philaenium* by Pareus.

2. Plaut. *Asin.* 898, where the Mss. give the speech "Ecastor dignus est" to the *Parasitus*. Given to *Artemona* by Acidalius.

(Ede)pol.

C. (EDE)POL is used by both men and women, in Plautus and Terence. The ratios are as follows : —

	Used by men.	Used by women.	Ratio.
<i>Plautus</i>	498	108	$4\frac{1}{2} : 1$
<i>Terence</i>	21	56	$1 : 2\frac{1}{2}$

i.e. *Edepol* (*Pol*) is rather a *man's* oath in Plautus and a *woman's* in Terence. It has been shown above that men preferred the form *Edepol* to *Pol*, and women the form *Pol* to *Edepol*.

V. COMPARISON OF THE USE OF (Me)hercle AND (Ede)pol BY MEN IN PLAUTUS AND TERENCE.

In *Plautus*, men swear (1) by *Hercules* 638 times ; (2) by *Pollux* 498.

In *Terence*, men swear (1) by *Hercules* 98 times ; (2) by *Pollux* 21.

i.e. Ratio (Me)hercle to (Ede)pol in *Plautus*, 1.3 : 1.

Ratio (Me)hercle to (Ede)pol in *Terence*, 5 : 1.

VI. COMPARISON OF THE USE OF (Ede)pol AND (M)ecastor BY WOMEN, IN PLAUTUS AND TERENCE.

In *Plautus*, women swear (1) by *Pollux* 108 times ; (2) by *Castor* 118.

In *Terence*, women swear (1) by *Pollux* 56 times ; (2) by *Castor* 7.

i.e. Ratio (Ede)pol to (M)ecastor in *Plautus* 1 : 1+.

Ratio (Ede)pol to (M)ecastor in *Terence* 8 : 1.

VII. GENERAL STATEMENT OF §§ V. AND VI.

In *PLAUTUS*, men swear about equally (1.3 : 1) by *Hercules* and by *Pollux*, and women about equally (1 : 1+) by *Pollux* and by *Castor*.

In *TERENCE*, men prefer *Hercules* to *Pollux* in the ratio 5 : 1 ; and women prefer *Pollux* to *Castor* in the ratio 8 : 1.

VIII. TABLES SHOWING THE USE OF THESE WORDS BY VARIOUS CLASSES OF CHARACTERS.

(N.B. The numbers after the sign + indicate the occurrences of the forms in parenthesis.)

1. ECASTOR (MECASTOR).

	UXOR.	LENA.	MERET.	ANCILLA.	MULIER.	SOROR.	OBSTET.	ANUS.	VIRGO.	MATRONA.	TOTAL.
Amphitruo ...	9										9
Asinaria.....	8	3	3								14*
Aulularia.....					+1			2+1			2+2
Bacchides			2								2
Captivi.....											
Casina					13+2						13+2
Cistellaria	2	5	2								9
Curculio.....											
Epidicus											
Menaechmi					3					4+1	7+1
Mercator			2		2+1			2+1			6+2
Miles Glor....			1+1	3	2+1						6+2
Mostellaria			2	3							5
Persa				1					1		2
Poenulus			4+1								4+1
Pseudolus											
Rudens.....					1						1
Stichus				1+1		3					4+1
Trinummus. ...											
Truculentus ..			11+4	6+2							17+6
<i>Plautus</i>	19	8	27+6	14+3	21+5	3	4+2	1	4+1	101+17
<i>Terence</i>			3		1+1		1	+1			5+2

Grand Total, *Plautus* and *Terence*, 106+19.

* Including two doubtful cases. See § IV., B., above.

				II. WOMEN.*				TOTAL MEN AND WOMEN.
	LOBAR.	DANISTA.	TOTAL MEN.	ANCILLA.	MERET.	MULIER.	TOTAL WOMEN.	
Amp.			7					7
Asin.			42					42
Aulu.			30					30
Bacc.			19					19
Capt.			12					12
Casit.			38					39
Ciste.			11					12
Curc.			24					24
Epid.			19					19
Men.	1		48					48
Merc.			46					47
Mile.			45					45
Most.			42					42
Pers.			28					28
Poen.			49					49
Pseu.			37+1					37+1
Rud.			53+1					53+1
Stich.			26+1					26+1
Trin.			29					29
Truc.			30	1				31
Plau.	1	2	635+3	1	1	2	4*	639+3
Ter.			96+2					96+2

Grand Total, Plautus and Terence, 735+5.
 * Doubtful cases. See § IV., A., above.

	II. WOMEN.								GRAND TOTAL.
	MERET.	ANUS.	MULIER.	SOROR.	NUTRIX.	VIRGO.	SERVA.	MATRONA.	
Amp.									3
Asin.	1+4								4+6
Aulu.		+3							+3
Bacc.	+6								+6
Capt.									
Casit.			+8						+9
Ciste.	1+1						1+2		4+5
Curc.		+1							+1
Epid.									
Men.			+1			1			1
Merc.	1+2		+2					+2	+3
Mile.	3+3		+1						6+11
Most.	1								1+3
Pers.	+1					+1			+7
Poen.	1+4								1+5
Pseu.									
Rud.									
Stich.			1+3						1+3
Trin.				1+4					1+4
Truc.	2+1								
Plau.	10+22	+4	1+15	1+4		1+1	1+2	+2	27+81
Ter.	5+13	1+1	3+14		+1				10+46

Grand Total, Plautus and Terence, 378+305.

ACCENTUAL RHYTHM IN LATIN.

BY J. B. GREENOUGH.

IN the great controversy as to whether the Saturnian verse was quantitative or accentual, each side maintains that the facts which support the view of the other are an accidental result of the laws of accent in Latin. It is said, on the one side, that a given scheme of quantity necessarily produces in some degree a certain succession of word accents, and, on the other, that a given succession of word accents must cause a certain scheme of quantity.


Now it so happens that we have one notable example of the connection between the two schemes in the history of the Sapphic verse. That this verse was originally purely a quantitative one is, of course, obvious. Yet throughout Christendom the commonly received scheme of the verse, except with professed scholars, is an accentual one, and has been for 1500 years. One familiar example is the fine German air by Fleming, to which *Integer vitæ* is sung by men's voices, and, curiously enough, sometimes at funerals. Another is a poem by Southey, *The Widow*, better known perhaps through the parody by Canning, —

Needy knifegrinder, whither art thou going?

Here we have an example of a quantitative verse changed by the effect of the word accent as it depends on the succession of long and short syllables into an entirely different one, a sapphic turned into a dactylic metre. So the rhythm


 In- te- ger vi- tae sce- le- ris- que pu- rus


became as soon as it was read by the word-accent,


 In- te- ger vi- tae sce- le- ris- que pu- rus.

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The causes which made this possible are two, one the permanent spondee universal in Latin in the second foot, and the other the caesura after the fifth syllable, which is almost always observed in Latin, but not in Greek, though it may be that Alcaeus practised it. If either of these phenomena is absent, the dactylic effect of the word accent is almost sure to be lost, though occasionally it happens to be preserved by some accidental succession of word accents.

In this dactylic scheme there are naturally four principal ictuses on the 1st, 4th, 6th, and 10th syllables, with two possible secondary ictuses on the 2d and 8th, thus:—

In' te' ger vi' tae || sce' le ris' que pu' rus.


As the fourth syllable is long in the Latin form, it must, if the caesura is observed, be a long penult and therefore accented; as,—

Iam satis ter'ris;
 Grandinis mi'sit;
 Aut in umbro'sis;
 Nec venena'tis;
 Unde voca'lem.

The only exceptions would be (1) the case in which one monosyllable alone (not two together) should stand before the caesura,—a case which, however, does not occur, whether designedly avoided or not,—and (2) the case where an elision throws the word accent out of its proper place. Of the latter case, there are four examples only in Horace, and none at all in Catullus, and it would seem as if it were purposely avoided. The cases in Horace are:—

Thessalo victo'r^e et (II. 4. 10);
 Oderit cura'r^e et (II. 16. 26);
 Imbrium divi'n^a avis (III. 27. 10);
 Pegasus terre'n^{um} equitem (IV. 11. 27).

This is obviously too small a number to be of importance.

If the next word after the caesura is a word of one, two, or three syllables, the first syllable must be accented, inasmuch as the next syllable is short; thus:—

. . . a'vidum domando;
 . . . et' avitus apto;
 . . . pri'us an quietem;
 . . . si'mul alba nautis.

If the word has four or six, there must always be a secondary accent on the first. This results from the length of the third syllable, thus : —

. . . su''pera're pugnīs;
. . . me''diocrita'tem.

A five-syllable word does not occur in this position.

The last syllable but one of the verse must, unless the last word is a monosyllable, be a long penult, and so receive the accent, thus : —

. . . atque di'rae;
. . . et rube'nte;
. . . fabulo'sus;
. . . mediocrita'tem.

Even if the verse ends in a monosyllable, the conformity of accent may be retained by another monosyllable preceding; as, *una mo'rs est: O' Sol.*

There are only four cases in Horace and three in Catullus where the conformity is destroyed by a monosyllabic close. These are, in Horace: *di'em qui, ne'fas heu, mi'nus iam, pur'pura-ve* (C. s. 9; IV. 6. 17; I. 25. 6; II. 16. 7). In the last case the accent is practically restored by a natural secondary accent on the *a*.

Here again the cases are so few as to be insignificant, and we have three out of the four dactylic ictuses agreeing with the word accent.

In the other perceptible word accents, the primary one of the first measure and the secondary (or half) one of the third, there is more chance for variation. In the first measure, as the second syllable is short, the word accents must always conform at least to the primary ictus of the dactylic measure, as : —

In'teger; — A'cer et; — Ia'm satis;
Si've neglectum; — Ne' sit ancillae.

If a word accent comes on the second syllable (as in *Iam satis*),

this naturally falls in as the secondary ictus of the measure, $\text{P}^1 \text{P}^2 \text{P}$.

Even such a rare case as *nuptiarum expers* is not felt as an irregularity on account of the necessary accent in *expers*, taken in connection with the secondary accent on the first syllable (*nu''ptia'rum*). The second word accent after the caesura, —

Iam satis terris nivis at'que dirae,

is likely to vary from the dactylic scheme, as there is a greater possible variety of combinations. But in the great majority of cases this accent conforms, because the proceleusmatic measure (the third of the dactylic scheme) may always have a secondary ictus or not, as the word accents suggest. If the form is like *sceleris'que purus*, the accent and ictus change places, the secondary accent of *sce''leris'que* becomes the primary ictus, and the primary accent falls on the secondary ictus. If the form is *ni'vis at'que*, both accents conform, one to the primary and the other to the secondary ictus. If the form is *gra'vida sagit'tis*, the secondary ictus disappears, as also in *ia'culis ne'que ar'cu*. In *lo'ca fab''ulo'sus* the secondary accent falls on the secondary ictus. Examples are : —

Per meos finis et' aprica rura ;
 Si tener pleno ca'dit haedus anno ;
 Larga nec desunt Ve'neris sodali ;
 Lenis incedas ab''eas'que parvis ;
 Nec dabunt quamvis re'deant'' in au'rum ;
 Auream quisquis me'''dio''crita'tem.

The few cases of monosyllabic endings may somewhat disturb this part of the verse also, but the cases, as seen above, are not numerous enough to count.

Thus if the caesura is preserved, the word accents of the verse must practically correspond to the dactylic scheme into which they have since developed, so that the moment a sapphic is read as prose, it at once becomes dactylic.

If the caesura is neglected, the verse does not usually conform at all, and were it not that Horace had set the pattern in his rigid form, we should probably never have had this dactylic measure. Catullus' sapphics are not numerous enough to be of any account, but out of thirty verses he has eleven in which the masculine caesura is disregarded. One more has a compound divided at the caesura. One of those with feminine caesura happens to conform to the dactylic scheme on account of an elision : —

Gallicum Rhenum horribile aequor ul-
 (Mosque Britannos).

In Horace, out of 612 verses, 47 have a feminine instead of the masculine caesura, as in —

Phoebe silvarumque || potens Diana.

These 47 are curiously distributed, being for the most part confined to a few (only nine) odes. Thus there are nineteen out of 57 in *Carmen Saeculare*, twelve out of 45 in IV. 2, six out of 33 in IV. 6; the remaining ten are scattered, but in only six odes, I. 10, 12, 25, 30, II. 6, and IV. 11. This curious distribution could hardly have been accidental, but it does not seem to be chronological nor caused by the subject.

Seneca, the tragedian, out of a very large number of sapphic verses, has not a single feminine caesura, and no verse that does not conform to the dactylic scheme.

Ausonius, out of 48 verses, has only one with feminine caesura:—

Lesbiae depelle modum quietis.

In all cases the Adonic must conform to the dactylic scheme, unless there is a monosyllabic close, which seems not to occur.

To show the difference in treatment between the Latin and the Greek, in the first ode of Sappho only eight verses out of 21 are constructed after Horace's model. None of the rest can be read with the Latin word accent so as to be rhythmical.

The definite and intentional following of the dactylic scheme seems to appear first in Christian hymns. One attributed to Ambrose (†397 A.D.) is the earliest I have found (wrong quantities in italics):—

Christe cunctorum dominator alme
Patris aeterni genitus ab ore
Supplicum vota pariter *ac* hymnum
Cerne benignus. — Daniel, XCVI.

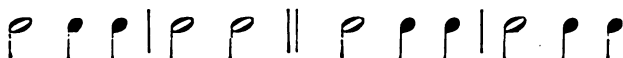
So others by Magnus Felix Ennodius (†521 A.D.; Daniel, CXXI.) and Gregory the Great (6th cent.; Daniel, CXLVI.). The famous hymn to St. John by Paulus Diaconus (8th cent.), which gave the names to the notes of our scale, is written in this form:—

Ut queant laxis resonare fibris
Mira gestorum famuli tuorum
Solve polluti labii reatum
Sancte Johannes.

This metre became one of the most common forms of Latin hymns throughout the Middle Ages, and a very large number are to be found in Daniel's *Thesaurus*. They are variously treated according

to the learning of the writers. Some of them conform entirely to the Latin rules of prosody, though obviously intended to be read and sung by accent; others seem to have little regard for quantity except so far as the scheme of accent produces the converse effect to that discussed above, securing a general conformity to prosody.

The prose rhythm of the Alcaic is not so simple, but there is a strong tendency in this also to an accentual rhythm. The scheme of this accentual rhythm is —



and the syllables by quantity for comparison are —



As the diaeresis after the fifth syllable is almost universal, there are only 59 verses out of 664 in Horace's Alcaics which do not have an accent on the fourth syllable, as must be the case from the penultimate law of accent. The exceptions are cases where the diaeresis follows a monosyllable, as *matu'rior vis*, or where the word accent is disturbed by elision, as *dixi sacra'ment^m*, *insania audi't^r*.

Of these 59, 19 have two monosyllables together, as, *securus O quae*; — *pugnare Thracum est*, so that the accent is practically restored. This leaves 40 which would be defective, but two of these, through having no diaeresis, happen accidentally to conform. Thus we have only 38 out of 664, a little over 5 per cent, that fail to have this principal and decisive accent.


The first word accent may be either on the first or second syllable, as in *vides ut alta*, and *Soracte nec iam*, but in all accentual verse the first accent is constantly misplaced, so that this practically makes no difference. In case the word accent falls on the second syllable, the first is almost inevitably treated as an anacrusis, and the measure becomes —



So we have practically two accents fixed in all but the small proportion given above.

As to the last half of the verse, the rhythm is not so marked as in the first. There are 236 out of the 664 that at first seem not to

conform to the dactylic scheme in one or both of the accents. But 19 of these have one accent right and a monosyllable in the place of the other, as *cla'vibus e't me'ro*; — *aut' ma're Cas'pium*, and may be treated as conforming. The rest are cases where the first word after the diaeresis is a monosyllable, a dissyllable, or a word of four syllables, as *cras' fo'liis ne'mus*; — *lig'na su'per fo'co*; — *susti'neant o'nus*; — or where the accent is disturbed by elision, as *tristi'tiam et me'tus*; — *parti'cul_{am} u'ndique*. But of the first kind, 17 have monosyllables in both of the accented places, and it will be noticed that a monosyllable may always receive the accent, and in that case the following accent (in the present sequence of longs and shorts) falls in with the sec-

ondary ictus of the dactyle, as *nam' ti'bi*; — *dis' pi'etas* . So the verse substantially conforms, as in *cui licet in diem*; — *et pecus et domos*.

Of the remaining 200 there are 85 which contain one monosyllable in the accented position followed by a trisyllable. This arrangement has one of the two required accents, and the want of the other is little felt because of the tendency of the rhythm to generate a secondary accent in the proper place, as *non' adytis' quatit*. This tendency is helped by the falling of the last word accent on the secondary ictus of the dactyle. Thus, *te' pro'fugus' Scy'thes* becomes



Thirty-three more have three dissyllables in this part of the verse, as *le'ne me'rum ca'do*; — *il'le po'tens su'i*. These limp a little, but they only have one accent out of four misplaced. The first word accent falls properly, and one word accent besides falls in with a secondary ictus. Thus we still have



Deducting all these as tolerably rhythmic, we have 82 left, of which three or four are disturbed by elision, as *particul^m undique*, *consim et tuos*. These have only one misplaced accent, but it comes in such a place that it breaks the rhythm, at least to my ear, more than any of the cases thus far treated. The rest are formed of a

four-syllable word followed by a dissyllable, so that neither accent conforms.

This then represents the whole number of verses that do not conform to the scheme sufficiently for an ordinary ear, only about 12 per cent of the whole.

But the Alcaic never seems to have been chosen as a Christian hymn-form, probably on account of the want of uniformity in the verses of the strophe.

Of the Asclepiadean, on the contrary, there are many examples among mediaeval hymns, though that rhythm seems much less suited to adaptation than the others to an accentual scheme. It has a general dactylic flow, but cannot be made to conform without violence, as : —

Maece'nas a'tavis e'dite re'gibus,
O et' praesi'di^m et dul'ce de'cus me'um,
Sunt' quos curri'culo pul'ver^s Olym'picum.

The mediaeval examples proceed in this form ; —

Exul'ta nim'ium tur'ba fide'lium
Sollem'ne ho'die mar'tyris in'clyti.
Est fes'tum mo'dula car'mine for'titer
In lau'dem do'mini at'que poten'tiam.
— *Cynthia*, Daniel, CLVII.

Fes'tum nunc ce'lebre mag'naque gau'dia
Compel'lunt a'nimos car'mina pro'mere
Cum Chris'tus so'lium scan'dit ad ar'duum
Caelo'rum pi'us ar'biter' (?).
— *St. Rabanus Maurus*, Daniel, CLXXXVII.

It is probable that such were not written until the use of the more flexible metres had established the style of treatment.

The question arises whether the classical writers of these metres could have been conscious of the accentual rhythm of their verse. In regard to Catullus, it can be assumed with confidence that he was not, or at least did not care for it in these complicated metres, of which by the way he made no particular study. But of Horace it is not so certain. The rigid spondee, to be sure, may have been forced in a manner by his material. But in the case of the caesura, that seems impossible. The distribution of the verses without caesura is so strange that it could hardly be accidental.

Three-quarters of the cases are in three odes. One-third are in the *Carmen Saeculare*, which we know to have been written for music, and actually sung, no doubt to a Greek melody, in which the prosaic rhythm would, of course, disappear. This phenomenon has been variously explained. The view of Kiessling is that the rigid caesura is due to a return to the original constitution of the Sapphic. But the chronological distribution of the cases of neglected caesura seems to be inconsistent with this view. Most of the cases are in Horace's later efforts, and we can hardly suppose that he adopted a theory of this sort as more profound, and then abandoned it in his later compositions. The only explanation would seem to be that he used the freedom of Sappho in the odes which were to be sung, or in which he had the idea of music in his head, and restricted himself for the most part in those which were to be read. May it not be that, wishing to reach a wider audience than the little circle whose ears were tuned to Greek music, he purposely adopted the form which was readable as prose? There seems to be no other reason for his adopting the restriction of the caesura which, as we have seen, is the most decisive factor in determining the prose rhythm.

Horace, as a man of the people, was quite capable of so doing, and he represents himself as charged by his enemies with wishing to be read by all classes. One might almost think he had this in mind when claiming to have introduced the metres to Latium. Then, again, the Sapphic and Alcaic, in which alone the prose rhythm is apparent, were his favorite metres. There was evidently no violent change in the transformation of the classical metres, at least as they were felt by the lay public, into the Christian hymns. Whatever we may think of the Saturnian verse in particular, it is clear that the Latin ear was tuned to a word-accent verse. Most of the early Latin poetry is so rhythmic in its prose accent that it could hardly have been written by any one whose ears were not accustomed to verse constructed on that principle. Ennius'

O magna templa caelitus commixta stellis splendidis

reads like a Christian hymn, and

Extemplo acceptum me necato et filiam

has a very modern tone.

In a number of iambic verses taken consecutively from the remains of Ennius and Naevius, as they are given in Merry's collection, out of 1500 ictuses, only about 22 per cent fail to conform to the word accent, and this counting all cases of verbs compounded with prepositions, though it may well be that the preposition was at that time accented, and all cases of a dissyllable at the end of a verse, though the last verse ictus must have been very weak.

The hymns attributed to St. Hilary (†368 A.D.) show 14 per cent of such non-conforming ictuses. And yet these hymns are the earliest beginnings of our system of modern poetry.

It can only be that an early accentual feeling of rhythm was partially superseded among the learned by the purely quantitative Greek rhythm; but in the decline of scholarship or the levelling up of the lower classes, the old sense of accentual rhythm began to assert itself more and more. This is the view of Keller and many others; and see also Klotz, *Altrömische Metrik*.

It seems quite possible that Horace was aware of this sense, and appealed to it in his two favorite rhythms. And no doubt the reason why the Sapphic afterwards became the only favorite one out of all the proper lyric forms was that it was metrical in prose as well as in poetry. It is not without significance that Seneca, the tragedian, has, in a thousand or so verses, not one that cannot be read in the Christian fashion. The fact that a verse preserves the quantities is no sign that it was not to be read as prose, for many of the Christian hymns are perfect in this respect. It is evident from the above discussion that the Horatian treatment of the Sapphic and Alcaic must have had a powerful influence on Christian hymnology, and was a potent factor in the introduction of accentual rhythms.

NOTE. — One thing appears in this investigation which, though not strictly belonging to the subject, is yet worthy of notice. We have an explanation of the peculiar license of modern so-called iambic verse, by which we can write: —

From all' that dwell' below' the skies',
Let' the Crea'tor's praise arise.

In Latin iambic verse written according to accent of course no dissyllable could properly stand in the first place. But in Christian poetry there were many such words almost necessary, such as *Christe*, *Deus*, *Pater*, *Lucis*. And these often would naturally demand the first place. Hence the license came in (perhaps encouraged by the practice in earlier popular poetry) of allowing such words in the first place, giving a trochaic accent to the first foot instead of an iambic one. The frequency of this practice has caused it to be followed in all Christian poetry, so that in modern times it seems to us as regular as any other form of the verse.

ON THE OMISSION OF THE SUBJECT-ACCUSATIVE
OF THE INFINITIVE IN OVID.

BY RICHARD C. MANNING.

THE aim of this paper is to discover the extent to which Ovid allows the omission of the subject of the infinitive, and to find the conditions under which he allows this omission, including the person and number of the omitted pronoun, the tense and voice of the infinitive, the position and construction of the word from which the subject-accusative is to be supplied.

The quotations from Ovid are in accordance with the text of the following editions : —

P. Ovidius Naso. Ex Rudolphi Merkelii recognitione edidit R. Ehwald. Tom. I. Leipzig: Teubner, 1888 (*Amores, Medicamina Faciei Femineae, Ars Amatoria, Remedia Amoris*).

P. Ovidi Nasonis *Heroides*. Edidit H. S. Sedlmayer. Leipzig: Freytag, 1886.

P. Ovidi Nasonis *Metamorphoseon Libri XV*. Edidit A. Zingerle. Leipzig: Freytag, 1884.

P. Ovidi Nasonis, *Fasti, Tristium Libri, Ibis, Epistulae ex Ponto, Halieutica, Fragmenta*. Edidit O. Güthling. Leipzig: Freytag, 1884.

The arrangement of my material is to some extent the same as Anton Funck's in his article on 'Die Auslassung des Subjekt-pronomens im accusativus cum infinitivo bei den lateinischen Komikern,' in *Fleckeisen's Jahrbücher*, 1880 (121. 725).

In the prose passage in which Seneca (*Controversiae*, 2. 2. 9) professes to quote from Ovid (he says, 'haec illo dicente excepta memini'), there is an instance of omitted subject-accusative after *doleo*.

This paper deals only with passages in Ovid where the subject of the infinitive is omitted; but the construction is only half understood when these passages are not minutely compared with those other passages where the pronoun that is the subject-accusative of the

Other instances are : —

With *iuvo*, — Met. 13. 964; Fas. 6. 589.

With *decet*, — Her. 19. 144; Tr. 1. 1. 3; 1. 1. 10; Pon. 1. 6. 20.

With *paenitet*, — Pon. 2. 3. 14:

gratis paenitet esse probam.

Also Her. 7. 134.

With *piget*, — Her. 14. 14; Met. 11. 778 (the manuscripts vary).

With *pudet*, — Met. 7. 617; Tr. 4. 3. 52; Pon. 4. 8. 14.

The accusative of the pronoun, in several of the examples cited above (e.g. Tr. 4. 3. 56), is the object; a second accusative as subject of the infinitive is, of course, quite unnecessary in most cases; it is, however, necessarily used in the following passage : —

Tr. 2. 70:

*fama Iovi superest: tamen hunc sua facta referri
et se materiam carminis esse iuvat.*

Instances in Ovid in which a predicate noun or adjective is attracted to the dative are few in number, but are found with various verbs. As they are so few, and as the fluctuations of the manuscripts in some passages between the dative and the accusative are interesting, I quote them all : —

Am. 1. 6. 23:

redde vicem meritis, grato licet esse, quod optas.

It is remarkable that here the attraction is caused by an unexpressed dative.

Her. 14. 64: *quo mihi commissio non licet esse pia.*

Tr. 3. 11. 21: *in causa facili cuius licet esse disertum.*

The manuscripts vary between *disertum* and *diserto*, and to some extent even between *cuius* and *quemvis*.

Tr. 5. 2. 6: *an magis infirmo non vacat esse mihi?*

Am. 3. 2. 8: *ergo illi curae contigit esse tuae?*

Met. 11. 219:

*siquidem Iovis esse nepoti
contigit haud uni, coniunx dea contigit uni.*

The reading *nepotem* is also found.

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Fas. 4. 804 :

num tamen est vero propius, cum condita Roma est,
transferri iussos in nova tecta Lares
mutantesque domum tectis agrestibus ignem
et cessaturae *supposuisse* casae,
per flammās *saluisse pecus*, saluisse colonos?

Saluisse pecus is a secondary idea. The last line is equivalent to *per flammās saluisse cum pecore colonos*.

But the passages that form the special subject of consideration are those in which the subject-accusative is entirely omitted, and of primary importance among these are those in which the infinitives depend on verbs (or equivalent expressions) of knowing, of saying, or other verbs of similar construction, with which the connection between the infinitive and the accusative is a close one. These are the examples, therefore, that require particular attention. They divide themselves into two classes: Class I., comprising examples in which the (unexpressed) subject of the infinitive and the subject of the verb on which the infinitive depends refer to the same person; Class II., containing the examples in which there is a change of subject.

CLASS I.

The instances where the omitted subject of the infinitive and the subject of the verb on which the infinitive depends are the same can be conveniently classified according to the person and number of the omitted pronoun.

a. In the first person singular occur : —

Pon. 4. 1. 5 :

sive trahis vultus, equidem *peccasse fatebor*.

Met. 11. 453 :

sed tibi *iuro*
per patrios ignes, si me modo fata remittent,
ante *reversurum*, quam luna bis inpleat orbem.

A. A. 2. 171 :

nec *puto* nec *sensi* tunicam *laniasse*, sed ipsa
dixerat.

Met. 14. 844 :

quae si modo posse videre
fata semel dederint, caelum *accepisse* videbor.

Here the usual reading is *videbor*, but there is manuscript authority for *fatebor*, which Merkel adopts.

Tr. 5. 10. 48 :

quod patriae vultu vestroque caremus, amici,
atque hic in Scythicis gentibus *esse queror*.

The text is uncertain.

Also, with *fateor*, — Met. 6. 357 ; Fas. 4. 321 ; Tr. 5. 5. 63.

With *confiteor*, — Met. 7. 164.

With *profiteor*, — Am. 1. 7. 33.

In the first person plural no instances of the omission of the pronoun are to be found.

δ. In the second person singular occur : —

Am. 3. 14. 15 :

quae facis, haec facito ; tantum *fecisse* negato.

Met. 6. 41 :

neve monendo
profecisse putes, eadem est sententia nobis.

Her. 4. 176 :

addimus his precibus lacrimas quoque : verba precantis
perlegis : et lacrimas *finge* videre meas.

Rem. 540 :

iam quoque, cum *credes* posse carere, mane.

A. A. 2. 349 :

cum *tibi* maior erit *fiducia*, *posse* requiri,
cum procul absenti cura futurus eris,
da requiem.

Here *tibi erit fiducia* is practically equivalent to some such form as *credes*.

Also, with *nego*, — Am. 1. 4. 70 ; Met. 2. 693 ; Fas. 6. 557 (the text is not certain).

With *puto*, — Met. 10. 354.



With *fateor*, — Am. 3. 14. 37; A. A. 2. 591; Pon. 4. 3. 19.

With *queror*, — Fas. 2. 855; 6. 473.

There are no instances to be quoted for the second person plural.

c. In the third person singular are found : —

Met. 6. 601 :

ut *sensit tetigisse* domum Philomela nefandam,
horruit.

A. A. 3. 733 :

ille, feram *vidisse ratus*, iuvenaliter artus
corripit.

Met. 2. 599 :

dominoque iacentem
cum iuvene Haemonio *vidisse* Coronida *narrat*.

Met. 7. 832 :

saepe tamen dubitat *speratque* miserrima *falli*.

Met. 11. 74 :

utque suum laqueis, quos callidus abdidit auceps,
crus ubi commisit volucris, *sensitque teneri*.

It is also possible to refer *teneri*, not to *volucris*, but to *crus*, in which case the omitted pronoun would be *id*.

Met. 10. 132 :

et ut saevo morientem vulnere vidit,
velle mori *statuit*.

Velle could also be interpreted as a complementary infinitive.

Also, with *nego*, — Am. 3. 14. 5; Met. 14. 151; Fas. 6. 336; Pon. 1. 7. 54,

though *nego* can in this last place be taken in the sense of 'refuse,' as well as in that of 'deny.'

With *fateor*, — Met. 11. 134; 12. 407; Tr. 2. 449; Pon. 1. 1. 51; 4. 5. 31.

With *puto*, — Her. 18. 32; Met. 9. 459.

With *sensio*, — Tr. 4. 1. 46.

With *queror*, — Her. 9. 43.

With *profiteor*, — Fas. 5. 671.

With *iuro*, — A. A. 1. 425.

With *refero*, — Tr. 5. 4. 22.

With *credo*, — Am. 1. 8. 71.

With *indignor*, — Met. 11. 787.

d. For the third person plural occur the following examples : —

Met. 2. 389:

omnesque dei non *posse fatentur*.

Am. 1. 2. 18:

acrius invitos multoque ferocius urget,
quam qui servitium *ferre fatentur*. Amor.

Met. 3. 573:

Bacchum *vidisse negarunt*.

A. A. 2. 558:

peccent, peccantes verba *dedisse putent*.

Her. 16. 261:

quae mihi non aliud, quam *formidare, locutae*,
orantis medias deseruere preces.

There are in all, then, 53 examples of this construction in Ovid, all but 5 of them in the singular. It occurs with 18 different verbs; the ones with which it occurs as many as four times are *fateor* (14), *nego* (9), *puto* (6), *queror* (4), and *sentio* (4). More than half the examples (27) have the perfect active infinitive (the perfect passive, on the other hand, is not found at all in this construction). There are 18 occurrences of the present active and 2 of the future active (A. A. 1. 425 and Met. 11. 453), both of them with the verb *iuro*, 5 with the present passive infinitive (Am. 1. 8. 71; Met. 7. 832; 11. 74; 11. 787; Fas. 6. 473). The verbs *fator* and *nego*, which, as has just been seen, have a special tendency toward the simple infinitive, *i.e.* the infinitive and the main verb represent actions of the same person, show also a marked preference for the perfect tense of the infinitive; of the 14 instances of the construction with *fateor* 10 have this tense, and all 9 of the instances with *nego*. Closely parallel to this mode of expression are the common English idioms 'I admit having done so' and 'I deny having done so.' It is noteworthy that the verbs *video* and *scio*, which are frequently found in Ovid with the accusative omitted when the infinitive denotes the action of another subject, are not found in this construction when the subject of the infinitive is the same as that of the leading verb.

This is perhaps because other constructions are often used instead of the accusative and infinitive with *video* and *scio*, when the accusative would be the same as the subject of these verbs. The accusative and infinitive, however, occur with *scio* in the following passages: A. A. 2. 247; Met. 10. 427; 15. 142. Examples of the same sort with *video* have thus far eluded search.

CLASS II.

The extent and variety of the examples included in Class II., that is, those in which the subjects of the infinitive and the verb on which it depends are not the same, will be most clearly seen by a classification according to the construction and position of the word from which the subject of the infinitive is to be supplied.

a. The omitted subject is often the antecedent of a relative clause, which more usually precedes the infinitive, but sometimes follows it. In the latter case the infinitive is usually accompanied by a predicate word in the accusative (though not at Her. 21. 25 and Met. 2. 393). It will be seen that the instances in the neuter are particularly numerous.

(1) Neuter singular: —

Her. 4. 133:

Iuppiter *esse* pium statuit *quodcumque* iuvaret.

Her. 17. 130:

nam mea vox quare, *quod* cupit, *esse* neget?

Pon. 2. 4. 15:

quod tu laudabas, populo *placuisse* putabam.

Also, Am. 2. 2. 14; A. A. 3. 720; Met. 3. 417 (bracketed by some editors); 15. 263; Tr. 3. 5. 28; 4. 7. 11; 5. 13. 19.

(2) Neuter plural: —

Pon. 4. 3. 58:

tu quoque fac timeas, et *quae* tibi laeta videntur,
dum loqueris, fieri tristia *posse* puta.

Ibis 127:

certe ego, *quae* voveo, superos *motura* putabo.

Her. 20. 242 :

effigie pomi testatur Acontius huius,
quae fuerint in eo scripta, *fuisse* rata.

The comma is sometimes placed after *eo*.

Also, Am. 3. 14. 45 ; Met. 4. 476.

(3) Masculine singular : —

Met. 2. 393 :

tum sciet, ignipedum vires expertus equorum,
 non *meruisse* necem, *qui* non bene rexit illos.

Fas. 3. 804 :

viscera *qui* tauri flammis adolenda dedisset,
 sors erat, alternos vincere *posse* deos

Tr. 5. 8. 11 :

vidi ego naufragium qui mersit in aequora mergi.

The manuscripts vary.

Pon. 4. 13. 27 :

nam patris Augusti docui mortale fuisse
 corpus, in aetherias numen abisse domos :
esse parem virtute patri, *qui* frena coactus
 saepe recusati ceperit imperii.

(4) Masculine plural : —

Met. 8. 220 :

quique aethera carpere possent
 credidit *esse* deos.

Her. 21. 25 :

iamque *venire* videt, *quos* non admittere durum est.

(5) Feminine singular : —

Met. 9. 724 :

quamque virum putat esse, virum *fore* credit Ianthe.

Met. 1. 586 :

quam non invenit usquam
esse putat nusquam.

A. A. 3. 715 :

iam iam *venturam*, *quaecumque* erat Aura, putabas.

Tr. 4. 3. 17:

non mentitura tu tibi voce refer:
esse tui memorem, de *qua* tibi maxima cura est.

The passage just quoted is the only one of all these (1 out of 26) in which the relative is neither nominative nor accusative.

(6) Feminine plural: —

Am. 3. 12. 38:

Protea quid referam Thebanaque semina, dentes;
qui vomerent flammis ore fuisse boves,
fiere genis electra tuas, Auriga, sorores,
quaeque rates fuerint, nunc maris *esse* deas.

b. Sometimes the antecedent, instead of being made the subject of the infinitive, is incorporated in the relative clause: —

Met. 15. 363:

nonne vides, *quaecumque* mora fluidove calore
corpora tabuerint, in parva animalia verti?

Her. 1. 74:

quaecumque aequor habet, *quaecumque* pericula tellus,
tam longae causas suspicor *esse* morae.

Met. 15. 133:

inponique suae videt inter cornua fronti
quas coluit *fruges*.

Pon. 2. 2. 68:

tempus adest aptum precibus; valet ipse videtque,
quas fecit *vires*, Roma, *valere* tuas.

c. The omitted subject-accusative is sometimes to be supplied from an accusative used in another part of the sentence as the subject of another infinitive: —

Am. 1. 2. 12:

vidi ego iactatas mota face crescere *flammis*
et vidi nullo concutiente *mori*.

Tr. 1. 2. 40:

nescit in immenso iactari *corpora* ponto,
nescit *agi* ventis, nescit adesse necem.

Pon. 1. 7. 70:

et mala *Nasonem*, quoniam meruisse videtur,
si non ferre doles, at *meruisse* dole.

Fas. 5. 167:

ora micant Tauri septem radiantia flammis,
navita quas Hyadas Graius ab imbre vocat.
pars Bacchum *nutrisse* putat, pars credidit esse
Tethyos *has* neptes Oceanique senis.

In this example it is to be noted that the subject is expressed only with the *second* of the two infinitives, though for the first it can be easily supplied from the preceding sentence.

Tr. 1. 1. 19:

vivere *me* dices, salvum tamen *esse* negabis:
id quoque, quod vivam, munus *habere* dei.

Here we have three infinitives, of which the first, with a subject, depends on *dices*; the second, without a subject, on *negabis*; while the third, also without a subject, depends on the *positive* idea expressed in *dices* and implied in *negabis*.

Tr. 3. 7. 9:

vivere *me* dices, sed sic, ut vivere nolim,
nec mala tam longa nostra levata mora.
et tamen ad musas, quamvis nocuere, *reverti*,
aptaque in alternas *cogere* verba pedes.

The pronoun serves as subject-accusative of three infinitives, *vivere*, *reverti*, and *cogere*, but the last two are separated from the first by an interposed infinitival clause with a subject of its own.

Also. Met. 9. 259; Pon. 1. 5. 77; 4. 6. 50; 4. 9. 99.

d. More frequently it happens that the omitted subject-accusative has already been expressed as the direct object of a verb:—

Met. 10. 256:

oscula dat *reddique* putat.

Pon. 2. 8. 9:

est aliquid spectare *deos* et *adesse* putare.

Met. 3. 245:

et velut absentem certatim *Actaeona* clamant —
ad nomen caput ille refert — et *abesse* queruntur,
nec *capere* oblatæ segnem spectacula praedæ.

Met. 15. 851:

natique videns bene *facta* fatetur
esse suis maiora.

Her. 21. 223:

si *me* nunc videas, *visam* prius *esse* negabis.

Tr. 1. 1. 14:

neve liturarum pudeat; qui viderit *illas*,
de lacrimis *factas* sentiat *esse* meis.

Met. 11. 438:

quo magis *hos* novi, — nam novi et saepe paterna
parva domo vidi — magis hoc reor *esse* timendos.

Hoc is the accepted reading, though there is manuscript authority for *hos*.

Met. 15. 278:

et Mysum capitisque sui ripaeque prioris
paenituisse ferunt, alia nunc *ire*, *Caicum*.

This is the usual punctuation. If the comma after *ire* were removed, the construction of *Caicum* would become undetermined.

A. A. 2. 265:

adferat in calatho rustica *dona* puer:
rure suburbano poteris tibi dicere *missa*.

Pon. 4. 9. 45:

haec modo *te* populo reddentem iura videbit
et se decretis finget adesse tuis:
nunc longi reditus hastae *supponere* lustrī
credet et exacta cuncta *locare* fide:
nunc *facere* in medio facundum verba senatu
publica quaerentem quid petat utilitas:
nunc pro Caesaribus superis *decernere* grates,
albave opimorum colla *ferire* boum.

Cernet is a variant for *credet*.

Also Am. 3. 7. 75; Her. 15. 92; Rem. 226; Met. 4. 376; 8. 191; 9. 446; 13. 28; 14. 162; 15. 847; Fas. 4. 900; 4. 930; 6. 238; Tr. 1. 7. 5; 1. 7. 34; 2. 72; Ibis 598; Pon. 2. 2. 125; 2. 6. 24 (bracketed by some editors).

c. In the following instance the subject-accusative is to be supplied from an accusative which comes under neither of the preceding cate-

gories; that is, it is neither a direct object nor the subject of an infinitive.

Met. 4. 609:

Acrisius superest, qui moenibus arceat urbis
Argolicae, contraque *deum* ferat arma, genusque
non putet *esse* Iovis.

f. The instances in which the subject of the infinitive is to be supplied from a genitive, a dative, or an ablative, are very few: —

A. A. 1. 372:

tum de *te* narret, tum persuadentia verba
addat et insano iuret amore *mori*.

Fas. 3. 874:

flebat, ut amissa gemini *consorte* pericli,
caeruleo *inunctam* nescius *esse* deo.

Met. 14. 230:

ille refert [line 223]
invidia socios praedaeque cupidine victos,
esse ratos aurum, dempsisse ligamina *ventis*.

Fas. 2. 419:

constitit et canda teneris blanditur *alumnis*
et fingit lingua corpora bina sua.
Marte *satos* scires: timor afuit.

Met. 5. 471:

illo forte loco dilapsam in gurgite sacro
Persephones zonam summis ostendit in undis
quam simul agnovit, tamquam tunc denique *raplam*
scisset, inornatos laniavit diva capillos.

g. There are many cases, on the other hand, where the subject of the infinitive is to be supplied from a preceding nominative: —

Tr. 1. 2. 20:

me miserum, quanti *montes* volvuntur aquarum!
iam iam *tacturos* sidera summa putes.
quantae diducto subsidunt aequore *valles*!
iam iam *tacturas* Tartara nigra putes.

Tr. 3. 7. 40:

sunt tibi *opes* modicae, cum sis dignissima magnis:
finge sed innumeris censibus *esse* pares.

Met. 6. 442:

vel *soror* huc veniat! *redituram* tempore parvo
promittes socero.

Met. 10. 27:

vicit Amor. supera *deus* hic bene notus in ora est,
an sit et hic, dubito. sed et hic tamen auguror *esse*.

Also Am. 3. 6. 36; Her. 11. 87; 20. 154; A. A. 3. 153; 3. 288; Met. 3. 453; 4. 272; 6. 583; 7. 378; 9. 507; 10. 255; 11. 546; 11. 718; 14. 488; Fas. 2. 405; 3. 658; 4. 316; 5. 634 (bracketed by some editors); 6. 434 (also suspected by some editors); 6. 704; Tr. 1. 7. 24; 3. 4. 66; 5. 6. 25; Pon. 1. 3. 88; 1. 6. 4; 1. 9. 3; 3. 3. 74; 3. 5. 10; 4. 13. 6.

h. It is noteworthy that, in two instances, the omitted subject-accusative is represented by a nominative in the following clause:—

Tr. 5. 10. 5:

stare putes, adeo procedunt *tempora* tarde.

Met. 6. 269:

lacrimaeque suorum
tam subitae matrem certam fecere ruinae,
mirantem *potuisse*, irascentemque, quod ausi
hoc essent *superi*.

i. The subject-accusative is sometimes to be supplied from a relative whose nominative antecedent is unexpressed:—

Am. 3. 9. 46:

avertit vultus, Erycis *quae* possidet arces:
sunt quoque, qui lacrimas *continuisse* negant.

A. A. 2. 522:

dicta erit *isae* soras, *quam* tu fortasse videbis:
isae soras et te falsa videre puta!

Here the peculiar repetition is responsible for the construction.

j. Or the nominative, though expressed at some distance, may be only implied in the sentence in which the infinitive stands:—

Met. 9. 38:

ille cauis hausto spargit me pulvere palmis
inque vicem fulvae tactu flavescit harenae.

et modo certamen modo contra incerta certat.
 hic agere times.

Also *Her. 11. 109*; *Met. 7. 360* (the text is uncertain); *Fab. 3. 177*.

3. Or more frequently, as would naturally be expected, the nominative is not expressed at all, but is to be inferred from the context of the same verb: —

Her. 11. 11:

res tibi dices: quam patenter times.
 res tibi dices, non videns omnia, feres.

Also *Pl. 11. 17:*

et taceat quid agas, spe nocet credere dices.

Also *Pl. 11. 477:*

et non accipis scriptum (electumque) remittis.
 accipis spera, propositumque reses.

Also *Ant. 11. 71*; *Pl. 11. 168*; *Her. 3. 113*; *Met. 11. 17*; *Pl. 111. 11. 160*; *Pl. 111. 11. 142*; *Fab. 3. 177*; *Pl. 11. 113*; *Th. 3. 1. 13* (where the text is uncertain).

4. When the subject of the infinitive is itself not expressed, and there is no noun which serves as its antecedent, its grammatical form is sometimes indicated by an adjective or by the participle contained in the infinitive: —

Met. 3. 151:

sacraque ex arce Minervae
 precipitans mox, aptum mensuris.

Fab. 3. 147:

ne missum: imitatus ut. imitare valeas
 et puerum posito proconsule gesu.

Met. 11. 235:

et iam prostratum iam nunc terra tectum reor
 in sua paritum.

Also *Rem. 170*; *Fab. 3. 100*; *Pon. 3. 1. 11*.

With these cases should be compared those where an adjective or participle so nearly approaches the character of a substantive as to be itself regarded as the subject of the infinitive: —

Pon. 1. 9. 8:

ante meos oculos tamquam praesentis imago
haeret, et *extinctum vivere* fingit amor.

Also Met. 7. 577; 8. 743.

m. The omitted accusative can sometimes be supplied from a word of slightly different grammatical form: —

Met. 1. 162:

sed et illa *propago*
contemptrix superum saevaeque avidissima caedis
et violenta fuit: scires e sanguine *natos*.

Fas. 6. 505:

quaerit ab his Ino, quae *gens* foret. Arcadas *esse*
audit.

A. A. 3. 167:

femina procedit *densissima* crinibus emptis
proque suis alios efficit aere suos.
nec pudor est emisse: palam *venire* videmus.

n. In

Am. 1. 13. 47: scires audisse: rubebat,

and

Am. 1. 12. 2: infelix hodie littera posse negat,

the prominent position of the heroine of the elegy in the poet's thoughts is more effectively brought out by the omission of any word expressly referring to her. Somewhat similar instances are: —

Met. 1. 242:

occidit una domus: sed non domus una perire
digna fuit: qua terra patet, fera regnat Erinys.
in facinus *iurasse* putes. dent ocius *omnes*
quas meruere pati, sic stat sententia, poenas.

Also Tr. 3. 5. 53:

spes igitur superest, facturum, ut molliat *ipse*
mutati poenam condicione loci.

Here, however, the reading *facturum* is thought not to be free from doubt.

This completes the list of instances in which the omitted subject of the infinitive is not the same as the subject of the verb on which the infinitive depends. Their number is 146. In about seven cases out of eight the subject of the infinitive is to be supplied either from a nominative (which is itself sometimes unexpressed), or from an accusative which is the subject of an infinitive or the direct object of a verb.

When these passages are classified according to the person and number of the omitted pronoun, the result is as follows :

In nine instances the pronoun of the first person singular is omitted,—

Am. 1. 11. 13; 2. 7. 8; Her. 21. 223; Tr. 1. 1. 19; 1. 1. 20; 3. 7. 9; 5. 9. 35 (text uncertain); Pon. 4. 6. 50; 4. 9. 99.

In not one case is the pronoun of the first person plural omitted.

In the second person singular four instances,—

Her. 3. 113; A. A. 1. 372; Met. 14. 842; Pon. 4. 9. 45.

For the second person plural only one instance,—

Tr. 3. 4. 66:

vos quoque pectoribus nostris haeretis, amici,
dicere quos cupio nomine quemque suo.
sed timor officium cautus compescit, et ipsos
in nostro *poni* carmini nolle puto.
ante *volebatis*, gratique erat instar honoris
versibus in nostris nomina *vestra* legi.

Even here it is possible to supply a verb of the third person from *suo*, but because of the preceding verb *haeretis* and the following *volebatis* such a construction seems less natural.

The remaining 132 instances are all of the third person, 27 in the masculine singular, 36 in the feminine singular (a notably larger number than in the masculine), 19 in the neuter singular, 19 in the masculine plural, 11 in the feminine plural, and 20 in the neuter plural. It was found impracticable to distinguish between persons and things, or between things animate and things inanimate, as, in the *Metamorphoses* especially, the dividing line between these categories is often far from clear.

There are also a number of passages where an indefinite *id*, referring not to a word but to a clause, is to be supplied as the subject of

an infinitive, and other passages where the infinitive is impersonal, and no subject is to be supplied : —

A. A. 1. 316:

adspice, ut ante ipsum teneris exultet in herbis!
nec dubito quin se stulta *decere* putet.

Tr. 4. 9. 4:

fac modo, te pateat *paenituisse* tui.

Met. 2. 788:

successurumque Minervae
indoluit.

Successurum is the accepted reading, though the manuscripts differ.

Tr. 5. 7. 26:

carmina quod pleno saltari nostra theatro
versibus et *plaudi* scribis, amice, meis.

Met. 15. 388:

et genus omne avium mediis e partibus ovi,
ni sciret *feri*, quis nasci posse putaret?

Fas. 3. 168:

si licet occultos monitus audire deorum
vatibus, ut certe fama *licere* putat.

Also Am. 3. 7. 46; Her. 5. 40; 17. 34; A. A. 1. 426; 1. 637; 2. 592;
Met. 3. 639; 11. 788; 14. 725; 15. 278; Pon. 1. 1. 58; 1. 9. 24; 2. 5. 16;
4. 5. 13.

For the sake of convenience a summary is made of the number of times the various pronouns are omitted : —

PRONOUN OMITTED.	CLASS I.	CLASS II.	TOTAL.
1st sing.	10	9	19
1st plur.	0	0	0
2d sing.	14	4	18
2d plur.	0	1	1
3d sing.	24	82	106
3d plur.	5	50	55
	53	146	199

The classification according to the voice and tense of the infinitive is as follows — the classification being made according to the *meaning*

of the form, so that deponent verbs are regarded as actives, and *meminisse* is grouped with the present infinitives :—

MOOD AND TENSE.	CLASS I.	CLASS II.	TOTAL.
pres. act.	18	81	99
perf. act.	28	26	54
fut. act.	2	11	13
pres. pass.	5	10	15
perf. pass.	0	16	16
pass. periphrastic . . .	0	2	2
	<hr/> 53	<hr/> 146	<hr/> 199

Esse is not expressed in any of the 13 instances in which the subject of the future active infinitive is omitted ; in 11 of the examples we find the simple future participle ; and *fore* in the other two (Met. 9. 724 ; A. A. 1. 425).

In the perfect passive infinitive the unaccompanied participle is found in 11 of the 16 cases, *esse* is expressed four times, and *fuisse* once. In the five passages in which the full form is used, the infinitival element always occupies the same position in the verse, which is, in one instance, the hexameter, in the other four, the pentameter :—

Her. 21. 223 :

si me nunc videas, visam prius *esse* negabis.

Fas. 3. 874 :

caeruleo iunctam nescius *esse* deo.

Fas. 4. 930 :

adstrictum longa sentiat *esse* mora.

Tr. 1. 1. 14 :

de lacrimis factas sentiat *esse* meis.

Tr. 1. 7. 24 :

pluribus exemplis scripta *fuisse* reor.

The same rule holds true in one of the two instances where *esse* is combined with the gerundive :—

Met. 11. 438 :

parva domo vidi — magis hoc reor *esse* timendos.

The other example has *esse* in the fourth foot :—

Tr. 1. 7. 34 :

si praeponendos *esse* putabis, habe.

We have seen that in the compound forms of the infinitive, *esse* and the subject-accusative are often omitted, and the participle only is expressed; in a similar way we, in several cases, find a predicate-adjective or predicate-noun, in the accusative, standing alone, without infinitive or subject-accusative. The construction with two accusatives and no infinitive is plainly the original one after verbs of knowing and the like; but it is impossible to tell how far the Romans of the classical period realized this, and to what extent they thought that such expressions involved the ellipsis of an infinitive. The passages concerned are as follows:—

Fas. 6. 335:

dubium, *nymphamne putaret*
an *scierit Vestam*.

Am. 3. 7. 83:

neve suae possent *intactam scire* ministrae.

Her. 16. 309:

nec, si *bona magna putaret*,
quae tenet, externo crederet illa viro.

A. A. 2. 597:

ista viri captent, si iam *captanda putabant*.

Also, with *puto*,—Am. 2. 8. 14; Met. 1. 502; 7. 69.

With *credo*,—A. A. 2. 287; Pon. 2. 7. 11.

With *reor*,—Her. 5. 145; Met. 4. 674.

With *experior*,—Ibis 322:

quosque putas *fidus*, ut Larissaeus Aleuas
vulnere non *fidus experiare* tuo.

With *dico*,—A. A. 2. 646:

omnibus Andromache visast *spatiosior aequo*:
unus, qui *modicam diceret*, Hector erat.

With *fateor*,—Met. 4. 736:

gaudent generumque salutant
auxiliumque domus servatoremque fatentur
Cassiope Cepheusque pater.

Also Met. 12. 596.

With *profiteor*,—A. A. 1. 181:

primisque *ducem profiletur* in annis
bellaque non puero tractat agenda puer.

With *queror*, — Her. 7. 30:

non tamen Aenean, quamvis male cogitat, odi;
sed *queror infidum* questaque peius amo.

With *mentior*, — Met. 9. 707:

iussit ali mater *puerum mentita*.

With *tingo*, — Rem. 504:

qui poterit *sanum fingere*, sanus erit.

The following is an alphabetical list of the verbs and equivalent expressions with which Ovid, as shown in quotations and citations above, omits the subject of the infinitive. The number of instances that occur with each verb is also given: —

arguo	1	(Pon. 4. 6. 50)
audio	1	(Fas. 6. 505)
auguror	1	(Met. 10. 27)
cerno	1	(Met. 4. 376)
comperio	1	(Pon. 3. 2. 82)
confiteor	1	(Met. 7. 164)
credibile est	1	(Tr. 2. 72)
credo	10	
dico	6	
doceo	1	(Pon. 4. 13. 27)
doleo	1	(Pon. 1. 7. 70)
fateor	18	
fero	2	(Met. 15. 278; Fas. 6. 434)
fiducia est	1	(A. A. 2. 349)
fingo	6	
gaudeo	2	(Met. 11. 546; Fas. 4. 900)
indignor	1	(Met. 11. 787)
infitor	1	(Pon. 1. 3. 88)
iuro	3	
latet	1	(Pon. 4. 13. 6)
liquet	5	
loquor	1	(Her. 16. 261)
memini	1	(Fas. 6. 238)
mentior	2	(Met. 1. 614; 8. 251)
miror	3	
mirum	2	(Met. 6. 583; 11. 731)
narro	1	(Met. 2. 599)
nego	17	
nescio	1	(Tr. 1. 2. 40)

nescius	2	(Met. 7. 380; Fas. 3. 874)
probo	1	(Tr. 3. 5. 28)
profiteor	2	(Fas. 5. 671; Am. 1. 7. 33)
promitto	1	(Met. 6. 442)
puto	45	22 % of the whole number.
queror	8	
refero	3	
reor	6	
scio	8	
sentio	9	
sors est	1	(Fas. 3. 804)
spero	2	(A. A. 1. 470; Met. 7. 832)
spes	2	(Fas. 6. 393; Tr. 3. 5. 53)
statuo	2	(Her. 4. 133; Met. 10. 132)
suspicio	1	(Her. 1. 74)
testor	1	(Her. 20. 242)
video	13	
	200	
Deduct	1	for passage inserted twice (A. A. 2. 171).
Total	199	

All the passages that have, as yet, been taken into consideration are such as are used with verbs of "knowing," of "saying," of "perceiving," or other similar verbs, with all of which the connection between the infinitive and the accusative is a close one. With many verbs, however, the accusative has no such close union with the infinitive, and differs only to a slight extent from an ordinary object-accusative. Verbs of this latter class are readily and often used with the infinitive and no accusative. Here, however, no attempt must be made to treat this topic; we must rather turn to the consideration of passages in which Ovid combines the infinitive with a predicate-nominative, where in prose a predicate-accusative would have been the natural construction.

With verbs indeed that are followed sometimes by the accusative and infinitive and sometimes by the complementary infinitive, it causes no surprise when a predicate-nominative appears, — as in the following examples with *gaudeo* and *despero* : —

A. A. 1. 345 :

quae dant quaeque negant *gaudent* tamen esse *rogatae*.

A. A. 1. 295 :

Pasiphaë fieri *gaudebat adultera* tauri.

Fas. 5. 241 :

cur ego *desperem* fieri sine coniuge *mater*
et parere intacto, dummodo casta, viro.

Ovid also combines *precor* and *posco* with the predicate nominative and infinitive, somewhat after the analogy of verbs of wishing : —

Her. 5. 158 :

sed tua sum tecumque fui puerilibus annis
et *tua*, quod superest temporis, esse *precor*.

Pon. 1. 7. 6 :

ecquis in extremo positus iacet orbe tuorum,
me tamen excepto, qui *precor* esse *tuus*.

Met. 8. 697 :

esse *sacerdotes* delubraque vestra tueri
poscimus.

In connection with these should be cited : —

Fas. 4. 381 :

dux mihi Caesar erat, sub quo meruisse *tribunus*
glorior ;¹

for the principle of construction with *glorior* is practically the same here as that with *gaudeo*. A more remarkable example is : —

Pon. 1. 5. 66² :

hoc, ubi vivendum est, satis est, si *consequor*, arvo
inter inhumanos esse *poeta* Getas.

Sometimes the nominative and infinitive is used with verbal phrases containing a noun, such phrases being in meaning equivalent to verbs that govern the simple infinitive : —

Am. 2. 19. 14 :

A! quotiens finxit culpam, quantumque licebat.
insonti, *speciem praebuilt* esse *nocens*.

Speciem praebuilt = *visa est* or *simulavit*.

Am. 2. 4. 14 :

spemque dat in molli *mobilis* esse toro.

¹ Cf. Hor. Epod. 11. 23.

² Cf. Cic. de. or. 1. 150.

Different from these and much more difficult is :—

Tr. 2. 10:

deme mihi studium, vitae quoque crimina demes,
acceptum refero versibus, esse *nocens*.

Here the metre is largely responsible for the nominative, as, indeed, it is to greater or less extent in all the examples.

A very strange construction, and unjustifiable except on metrical grounds, is found at

Tr. 4. 3. 51¹:

me miserum, si turpe putas mihi *nupta* videri.

Specially interesting are the instances where verbs that usually govern the accusative and infinitive are found with an infinitive and predicate-nominative, evidently in imitation of the Greek. This nominative is sometimes a noun or adjective, sometimes the participle contained in the infinitive. This is not the place to discuss the origin and character of the construction, as Ovid yields one example only for each of these classes. They are, with predicate noun in the nominative :²—

Met. 13. 142:

sed enim, quia rettulit Aiax
esse Iovis *pronepos*, nostri quoque sanguinis auctor
Iuppiter est.

With the perfect participle in the nominative (and *esse* unexpressed)³:—

Met. 9. 546:

pugnavique diu violenta Cupidinis arma
effugere infelix, et plus, quam ferre puellam
posse putes, ego dura tuli. *superata* fateri
cogor, opemque tuam timidis exposcere vatis.

¹ But compare Lucan. 9. 1038:

utque fidem vidit sceleris tutumque putavit
iam bonus esse socer, lacrimas non sponte cadentis
effudit.

² Cf. Cat. 4. 2; Verg. Catal. 8. 2; Hor. Ep. 1. 7. 22; Verg. Catal. 11. 24; Prop. 3. 6. 39.

³ Cf. Verg. Aen. 2. 377.

LATIN ETYMOLOGIES.

BY J. B. GREENOUGH.

I. *Auctor*.

THE ordinarily received course of development of *auctor* from *augeo* has always seemed to me contrary to what we know of the methods by which words are formed. In Lewis and Short's (*Harper's*) Dictionary, we read under *auctor*, 'he that brings about the existence of any object or promotes the increase or prosperity of it, whether he first originates it, or by his efforts gives greater permanence or continuance to it; to be variously translated,' etc. This is a very good description of the meanings of the word, but it is evidently intended to suggest a course of etymology from *augeo* which cannot be right. In the great revision of Forcellini by De Vit, we have, in like manner: *proprie significat qui auget, h.e. gignit ac producit*. But we can hardly suppose the ideas expressed by the word can all come directly from the verbal idea of *increase*. Not that the two sets of ideas are inconsistent or far removed from each other, abstractly considered, but they do not correspond in any tangible direct sense, such as is necessary for the development of a word so old as *auctor*.

The word-making process moves in lines of thought often frivolous, superficial, 'unessential,' but always obvious and immediately apprehensible. When you find an abstruse and profound connection of thought between two words, one which appeals to the sense of the true inwardness of things, you may be sure it is not the right one. Many etymological notions resting on associations of ideas that fit very well with the essence of things are erroneous. As a fact, slang is the only example we have of the real growth of words.

The names of *Peelers* and *Bobbies* applied to policemen, both derived from Sir Robert Peel's constabulary reforms in Ireland, and even the regular name of *police*,—really the name for the sanitary

cleaning of cities and armies, — indicate the kind of associations by which new words are formed and developed. These associations are constantly distorted in popular language, and twist words into meanings which are very far from the original etymon.

The methods by which a philosopher, *as such*, — for every philosopher is a mere man far more than he is a philosopher, — would make words, are precisely the methods by which words are not made. And it is just the popular, transient, and superficial associations that must be followed in the tracing of the etymologies of words, when the origin of the words is so remote that the actual associations have been forgotten.

The word *backer* in English, for instance, seems at first sight to be immediately connected with the idea of some one *behind* as a supporter, and probably in many cases is used with that idea; but in fact it comes through one or two much less abstract associations of ideas, meaning in some uses originally the endorser or man who 'backs' (writes his name on the back of) a note, and in some uses one who puts his money on a card. These two streams have united in the word. Is there, then, any way in which *auctor*, with its multifarious meanings, can come from *augeo*?

Now, in the case of this word, we have a complete set of the *t*-formations, *aucto*, *auctus*, *auctor*. In what palpable and natural sense could *auctor* originally have meant an *increaser*, so as to agree with the verb of the set? The suggestion is found in the kindred word *auctio*. If *auctio*, from being an 'enhancement' (of the price), comes to mean an 'auction sale,' *auctor* may well be the agent of the same action. In such a proceeding who would be the *enhancer*? Who enhances the price at an auction? We think at once of the buyer, but there are many indications that the opposite method, often in vogue nowadays, was the original one. 'Shall I have twenty-five?' the auctioneer says. If any one nods or makes any intelligible sign, the auctioneer continues, 'Twenty-five; who'll give thirty?'

In ancient times the bidding was regularly made by a sign. See *digito licere*, as in Verr. 2, 3, 27, and *tolere digitum*, Ibid. 2, 1, 141. See also the story in Suet. Cal. 39, where Caligula played a joke on Aponius Saturninus by causing a worthless lot of property to be knocked off to him, because, being asleep at an auction, he continued to nod while the auctioneer raised the price.

So, again, in the *locus classicus*, Stichus, 193 :

Haec verba subigunt me uti mores barbaros
Discam atque ut faciam praeconis compendium.
Itaque auctionem praedicem ipse ut uenditem.

(221) Logos ridiculos uendo. Age licemini,
Quis cena poscit? Ecqui poscit prandio?

That is, the seller asks for a price, and if that is offered, he immediately raises it. Of course if the price is not offered, he comes down, as in this case ; but the usual custom doubtless was to raise the price.

If this view be correct, the *auctor* would be originally the *seller at auction*, which was the common method of selling at Rome. This auction was apparently managed by the seller himself (cf. *mores barbaros*, above) ; so that the two words *auctor* (*seller*) and *auctio* (*sale*) would be a natural pair. And in fact *auctor* is regularly used in juristic language for vendor. See, *P. Caesennius, auctor fundi*, Caec. 10, and also *Quaero an pila quae ab auctore domui coniuncta erat ad emptorem quoque iure emptionis pertineat* (Dig. 19. 1. 52, quoted from Scaevola).

The derivative *auctoro*, with the distinct meaning of *sell*, and its derivative *auctoramentum*, *price*, strongly confirm *vendor* as the original meaning of the word. Cf. *est enim illis (mercenariis) ipsa merces auctoramentum servitutis*, Cic. de Off. 1. 150.

The first step in the wider development would be the use of such expressions as, *tum illi intellexerunt se id quod a malo auctore emissent diutius obtinere non posse*, Verr. II. 5. 56. Here an immunity has been purchased by the Mamertines from Verres, and the purchase is not secured to them. So the idea of guarantor in reference to title becomes attached to the word ; cf. *bonus auctor*, *gravis auctor*, used in a figurative sense, *a reliable guarantor*, *a good authority*. Cf. *non si mihi Jupiter auctor spondeat* (Aen. V. 17), where, as so often in other cases in Virgil, the original meaning shines through. Closely akin are *certissimus auctor* (Geo. I. 432), *non futilis auctor* (Aen. XI. 339), *Italiam petit fatis auctoribus* (Aen. X. 67). In fact, from this use comes the very general use of the word in all connections as *an authority*, the commonest meaning of the word, from which the

abstract *auctoritas* gets its meaning. Closely akin, though perhaps assisted by the use in the next stage, is the meaning *adviser*, where really there is no clear idea of a *responsible party*.

The meaning of *originator* and the like naturally comes through *auctor legis*, which means properly the *proposer*, that is, the *authority* of a bill; in other words, the voucher for it before the people. With this official use belongs *auctores fieri*, used of the senate, originally an action preceding the offer of a measure for the popular vote. In this manner of development all the various uses attach themselves to the original idea without any forcing. It is curious enough that the ordinary grouping of meanings under the word exactly reverses this natural development; so that if it had occurred to anybody to read the article in Harper's Dictionary, for instance, backwards, he would have had the whole history of the word admirably set forth.

II. *Opto*.

Every one must have noticed the tendency that Latin writers have to use *opto* in a religious or semi-religious sense. Thus, we find constantly such expressions as *a dis immortalibus optabo*, Cic. Cat. 2. 7. 15; *equidem tibi bona optavi omnia*, Plaut. Rud. 639 (this follows a jocose adjuration). So also:

Di tibi omnes semper omnia optata offerant, Ter. Ad. 978;
 Di tibi dent quaequomque optes, Plaut. Mil. 1038;
 Cupimus optamusque, Cic. Phil. 14. 1. 2;
 Dari votis optat aprum, Ae. IV. 158.

Very commonly it gives the sense of the English *hope and pray*.

This tendency suggests that the word may have once had a quite different meaning. It seems not unlikely, at any rate, that the primitive *†opio* (see *praedopiont*, *praeoptant*, in Festus) is akin to *ops*, *opus*, and *opera*, and meant *serve*, with a special religious sense, either very early developed,—in which case we may compare Sanskrit *apas* and *āpas*, both meaning *religious ceremony*,—or else later acquired, as is the case with *facio*, *πέζω*, and others. We may compare the technical use of *operor* as *worship*. So *operari est deos religiose et cum summa veneratione sacrificiis litare*, Non. 523. 9. Cf. Virg. Geo. I. 339.

The transfer from *serve* to *pray* is natural enough, as we see by the acquired force of *veneror*, as in *si veneror stultus nihil horum*, Hor. Sat. II. 6. 8, and often elsewhere in the same sense.

The primitive †*opio* must have very early become specialized in the meaning of *choose*, as we see by *optio*. This development might naturally come from some such association as is found in the *three wishes* of fairy lore, which are of course really alternative prayers granted by some superior power. Cf. *Theseo cum tris optationes Neptunus dedisset*, Cic. Off. 3. 25, 94.

The whole group, though obviously thus connected, does not give any natural analysis in reference to the sequence and relationship of its various aspects. The idea of *service*, however, certainly runs through all the members. There are many phrases with *opus* where it is parallel with the English word *use*, i.e. *service*, as *Nil opus est, it's of no use; atque haud sciam an ne opus sit quidem nihil unquam omnino deesse amicis*, Lael. 14. 51 (entirely equivalent to *expediat*). So also *opera*, whatever its exact relation to *opus*, often has this same sense. Thus *operam dare* is almost *render service*; *non operae est* often means *it isn't worth while, it's of no use*. The use of *operae*, *laborers*, is of the same character, properly *services*, like the English *help*.

The derivative *operor* runs in the same groove. The simplest representative of the common root, *ops*, is the most puzzling in its various meanings. The idea of *service* is apparent enough, but it is certainly highly colored with various other religious ideas, as is seen from the personification of the notion as a divinity, taken in connection with the obscure rites by which the divinity was worshipped and the various identifications which she underwent. She may have been a corn-demon, or a personification of worship or of some other primitive idea or act. But without more knowledge of the religious usages connected with the word, it is impossible to analyze the associations that belong to it in its common use. Perhaps in time, in the increased attention to early religious ideas and rites, some solution may be found.

III. *Exerceo, Exercitus.*

The development of the ordinary meaning of *exercitus* has generally, it seems to me, been wrongly traced, or perhaps better, assumed.

We happen to have in English words which suggest a more natural association of ideas for the word.

"A *train-band* captain eke was he
Of famous London town,"

means that John Gilpin was a captain of militia. So the '*May training*' of New England was the meeting of the militia for military exercise. In my childhood I only knew soldiers as '*trainers*.' Following this analogy, *exercitus* as the abstract of *exerceo* might well mean '*the training*,' i.e. the army of the city assembled for military exercise, as in English 'a numerous following,' for instance, gives a concrete sense to an abstract word. This view in a somewhat different form has also been held by others; see Keller, *Lateinische Etymologien*, p. 52.

The underlying notion of *exerceo* is however less obvious. The group of words to which it belongs has a very clear fundamental conception, though the notion is not easily expressed in English. The idea of 'setting a barrier,' either from outside in, as it appears in *coerceo*, or from inside out, as in *arceo* and *arx*, or perhaps both ways, as in *arca*, is plain. But what can *exerceo*, meaning 'exercise, train,' keep in or off? A suggestion is given by the peculiar use of the Greek *ἐκπονεῖν* and *ἐκπονέσθαι*.

An example from the Education of Cyrus (Cyr. i. 2, 16) shows the notion that the Greeks attached to these words:

Καὶ νῦν δὲ ἔτι ἐμμένει μαρτυρία καὶ τῆς μετρίας διαίτης αὐτῶν καὶ τοῦ ἐκπονέσθαι τὴν δίαitan. Αἰσχροὺς μὲν γὰρ ἔτι καὶ νῦν ἐστὶ Πέρσαις καὶ τὸ πτύνει καὶ τὸ ἀπομύττεισθαι καὶ τὸ φύσῃς μέστους φαίνεσθαι· αἰσχροὺς δὲ ἐστὶ καὶ τὸ ἰόντα ποῖ φανερόν γενέσθαι, ἢ τοῦ οὐρήσαι ἕνεκα ἢ καὶ ἄλλου τινὸς τοιούτου. Ταῦτα δὲ οὐκ ἂν ἐδύναντο ποιεῖν εἰ μὴ καὶ διαίτη μετρία ἐχρῶντο καὶ τὸ ὑγρὸν ἐκπονοῦντες ἀνῆλθον ὥστε ἄλλη πη ἀποχωρεῖν.

The same association of dryness with physical strength and endurance existed also among the Romans. The words *siccus* and *siccitas* are regularly used of men 'in good condition' or 'in training,' as the modern athletes say. Thus, in describing the robust old age of Masinissa, Cicero says: *summam esse in eo corporis siccitatem* (Lael. 34). So Nonius explains *siccum* by *exercitum*, and cites Varro as

saying, evidently in allusion to the Greek passage quoted above, *Persae propter exercitationes pueriles modicas eam sunt consecuti corporis siccitatem ut neque spuerent neque emungerentur* (Non. 4. 26). So also Lucilius in the same passage is represented as saying, *cum studio in gymnasio duplici corpus siccasset pila*. Cf. *Corpora graciliora siccioraque*, Plin. 34. 19. 15. In fact, the idea is a very old medical one, of which our word *humor* preserves a souvenir. The general currency of this idea suggests that *exercere* was originally *exercere umorem*, i.e. *siccare corpus*; in other words, *exercise*. The thing that was *kept off* was the 'peccant humors of the blood.' The use of the word in the later sense becomes more natural when we consider the ease with which the object of a verb used in a special phrase is dropped. One might hear a New England girl say, "No, I don't *play* (the piano) in public, but I *take* (lessons) of Professor A, and I *practise* (playing?) a great deal." Nor need we go farther than the Latin, in which we have *putare* (rationes), *facere* (rem divinam), and numerous other verbs used *absolutely*, as we say. At first sight it seems an objection that *exercere* is not merely used absolutely but takes a personal object (*exercere se, exercere tironem*). But nothing is more common than such a shifting of the relation between a verb and its object. The word *defendere* has undergone a change precisely similar. From meaning *ward off* it has come to be used very naturally as *defend*, a change of the same kind and in the same direction as the one supposed in *exercere*. In fact the change from *defendere iniuriam* to *defendere vitam* is on the whole greater than that from *exercere umorem* to *exercere se*.

This explanation seems a more natural one than that given by Keller in the discussion cited above. The borrowing of a Greek word like ἀσκεῖω seems very unlikely when we consider the rest of the compounds of *arceo* and its kindred nouns.

ON *πεῖραρ* ἐλέσθαι (Σ 501) AND THE MANUS
CONSERTIO OF THE ROMANS.

BY FREDERIC D. ALLEN.

Πεῖραρ 'rope' and *πεῖραρ* 'end'—these words (or meanings, if you will, of the same word) the expounder of Homer has much ado to apportion justly. But of several crucial passages involved, the most difficult is certainly that in the description of the Shield of Achilles, Σ 497 ff.:—

λαοὶ δ' εἰν ἀγορῇ ἔσαν ἀθρόοι· ἔνθα δὲ νείκος
ὠρώρει· δύο δ' ἄνδρες ἐνείκεον εἵνεκα ποινῆς
ἀνδρὸς ἀποκταμένου· ὁ μὲν εὖχετο πάντ' ἀποδοῦναι,
500 δῆμῳ πιφαύσκων, ὃ δ' ἀναίνετο μηδὲν ἐλέσθαι·
ἀμφω δ' ἰέσθην ἐπὶ ἵστορι *πεῖραρ* ἐλέσθαι·
λαοὶ δ' ἀμφοτέρουσιν ἐπήπυνον, ἀμφὶς ἀρωγοί.

Almost every one resorts to the meaning 'end.' 'Πέρας λαβεῖν', 'finire litem,' 'take an issue,' 'accept a decision,' 'obtain consummation,' 'Ziel d. i. Entscheidung gewinnen' are translations given. The ancients usually took ἵστορι as μάρτυρι ('by the aid of a witness'), explaining that τὸ τέλος τῆς δίκης οἱ δικάσται ἐτίθεντο ὥστε τὸν παρέχοντα μαρτυρίαν νικᾶν (Schol. A). Modern scholars oftener understand it as 'umpire,' 'referee'; it certainly has this sense in Ψ 486.

But whichever meaning of ἵστορι we adopt, the interpretation is forced. Supposing for the moment that *πεῖραρ* can mean 'decision,' still ἐλέσθαι is not an appropriate word.¹ It implies, especially as reinforced by ἰέσθην, much too *active* a taking.² *Πεῖραρ* ἰκέσθαι would be a more suitable phrase. It would perhaps be captious to ask how

¹ Zenodotus wrote ἀπέσθαι here (or was it in 500?), but this affords no relief.

² This is not disproved by the foregoing verse, where, as in ο 367, ξ 297, ω 334, ἐλέσθαι is idiomatically used (like *toucher* in French) of the receipt (taking possession) of moneys due. The meaning is probably 'he refused to *lay hands on* a single sheep.' I incline to accept Leaf's exposition of this passage, *ἀναίνετο* being best taken as = 'recusabat.'

a longing to 'accept a decision' on the part of two wranglers could find expression in sculpture. It is, however, a pertinent inquiry whether just this would be the 'eager longing' of a man engaged in a public quarrel, backed by a crowd of shouting adherents.

These difficulties must have occurred to others, and I do not doubt that many have felt what only Doederlein (*Homer. Glossar.*, vol. II, p. 138) has spoken,—that these words naturally mean 'seize the rope in presence of an umpire.' But what rope? A metaphorical rope, Doederlein answered. Rope-pulling, he thought, was used as a figure for a judicial contest, just as it is elsewhere in Homer for a battle; 'seize the rope,' meant 'begin the trial.' A harsh and abrupt metaphor, surely. I should prefer it to the usual explanation, but I cannot think it satisfactory.

But need the phrase be figurative? I propose, with diffidence, to take it literally. In support of this I can offer only an hypothesis, based on rather remote analogies. It makes no claim to be considered as a proof. I would translate verse 501 'and both were hastening to grasp the rope before the umpire.' The rope-grasping I conceive as a symbolical act, typifying an actual bodily contest, and preliminary to a trial before judges,—analogous, in short, to the ceremony called *manum conserere* among the Romans.

Pulling-matches must have been familiar to the Homeric Greeks. The conception of a battle as a rope-pulling between Trojans and Achaeans, with gods at the extremities of the line, meets us more than once in the *Iliad*.¹ Of course some actuality furnished the basis for this metaphor. It may have been a mere game or gymnastic exercise. In later times there were such games. In that called *διελκυσσίνδα*, mentioned by Pollux (IX, 112), *δύο μοῖραι παίδων εἰσὶν ἑλκυσσαι τοὺς ἑτέροισι οἱ ἑτέροι.* A rope is not mentioned here, but in another variety of the game described by Pollux (IX, 116), Photius, Hesychius and Eustathius,² under the name of *σκαπέρδαν ἑλκειν*, a rope is passed through a hole in a post, and two men, back to back, pull on the ends. A simple "tug of war" between two youths, with a short rope provided with handles, is depicted on a gem in Florence (Krause, *Gymnastik und Agonistik*, plate VI, 1^a).

But this game may once have been more than a game. Organized

¹ H 102, and elsewhere. See below, p. 165.

² On P 389 (p. 1111, 24).

pulling-contests for the decision of controversies are not unknown in primitive society. It will be remembered that Zeus proposes such an one at © 19, to settle the question of superiority between himself and the other gods. The trial suggested in this famous passage is only a "tug of war" with the advantage of gravity on one side. I give such other instances as I have been able to come by; it is very likely that others exist and can be pointed out by those versed in folklore. In the Pāli version of the story of Solomon's judgment the "Future Buddha" (Bodhisatha) finds two women quarrelling about the possession of a child. He proffers his services as umpire, and they agree to abide by his decision. "Then he had a line drawn on the ground, and told the Yakshini to take hold of the child's arms and the mother to take hold of its legs, and said 'the child shall be hers who drags him over the line.'"¹ Mr. James Deans² relates that in Hoiduk Land, Queen Charlotte's Islands, Indians of different tribes used often to unite in killing a whale. Possession was then decided in the following manner. Cedar-bark ropes were fastened to head and tail. "When all was ready, at a given signal, every man pulled with might and main, the representatives of each tribe by themselves pulling in a different direction to the others. The tribe who pulled the whale furthest were the victors. . . . The winning party took the spoil home to their village . . . ; the losing party good-naturedly started for their homes, well knowing it might be their lot to be victorious in the next pull they had." I suspect from the context that "pulling" here means rowing, but the principle is the same. A curious pulling-match is reported from among the Eskimo. The community divides itself into two parties, the "ptarmigans," those who were born in the winter, and the "ducks," or children of summer. "A large rope of sealskin is stretched out. One party takes one end of it and tries with all its might to drag the opposite party over to its side. The others hold fast to the rope and try as hard to make ground for themselves. If the ptarmigans give

¹ T. W. Rhys Davids' "Buddhist Birth Stories," vol. I, pp. xiv-xvi. I am indebted to Professor Lanman for this instance, and to Mr. W. W. Newell for the three following. Dr. Hayley remembers an account, in the narrative of an African explorer, of an organized pulling-match for the possession of a woman, in which the woman sustained such injuries that she died; but he is unable to furnish the reference at present.

² *American Antiquarian*, vol. X (1888), p. 42.

way, the summer has won the game, and fine weather may be expected to prevail through the winter."¹ This is perhaps little more than a game, though it appears that a religious significance is attached to it.² More to the point is the method by which the Passamaquoddy Indians of Maine decided between rival claimants of the chieftainship. "If there were two candidates, the matter was decided by the candidates' joining hands over a mark drawn between them, their adherents forming two lines by each clasping his arms round the waist of the one in front of him. The party which succeeded in pulling the opposition candidate across the mark had the right to elect the chief."³

We have here pulling with and without a rope; and we have — it will be further observed — both the pulling of the object in dispute, and a pulling pure and simple to decide an abstract question. These pullings are no more absurd than the old European trial by combat; in fact they are simply mild and bloodless forms of such a trial. We might suppose our Homeric rope-seizing to be an actual pulling-match for the settlement of the dispute, did the description end with the passage I have quoted above. But there follows a further description, apparently representing a new relief on the shield, which shows us a later stage of the same proceedings. Here a court of justice, consisting of *γέροντες*, is trying the cause. The description is not very clear, and the exact meaning of several phrases is in doubt. But it is certain that no such rudimentary justice as rope-pulling is there dispensed. I have therefore imagined the rope-seizing to be symbolic, — a purely formal contest, to furnish the needed ground for a magistrate's interference. For this we have the significant analogy of Roman judicial procedure.

The theory of the Roman *legis actio* was, as Maine has convincingly shown, that a magistrate must see a quarrel going on before he could interfere. When litigants appeared before him, therefore, the first step was the enacting of a sort of mimic contest, called *vindicatio*.

¹ F. Boas, in the Sixth Annual Report of the Bureau of Ethnology, p. 605.

² Mannhardt, *Zeitschrift für deutsche Mythologie*, vol. 4 (1859), p. 301 ff., interprets our children's pulling-games ("London Bridge" and the like) as originating in religious notions of a contest between the powers of light and darkness for the possession of souls.

³ Mrs. W. Wallace Brown, in the *Journal of American Folklore*, V. 57, Jan.-Mar., 1892.

Gaius, IV, 16, gives in full the formalities employed in case the object in dispute was a movable chattel, like a slave. Both parties laid hold of the slave, each in turn touched him with a stick (*festuca, vindicta*), and claimed him in a form of words. The magistrate then said *mittite ambo hominem*, and both loosed their hold. Then further parley, which does not concern us. We are not told that they pulled the man, but the joint seizure certainly seems to typify pulling, and we are told that the stick represented a weapon. So much for movable property; now how about immovables, which could not be brought into court? Gaius goes on to make provision for these (IV, 17) in a passage which is incomplete, as a leaf of the book is gone. He says that a *part* of the object was brought before the magistrate, — a tile from a house, a clod from a farm, etc., — and that proceedings went on as over the whole (*in eam partem perinde atque in totam rem praesentem fiebat vindictio*). But this cannot be the whole of the story, at least as regards land. For we happen to hear from two other sources, Gellius XX, 10 (a vexed and vexing passage), and Cicero pro Murena 12, 26, about another act, performed at the land itself. Respecting this act the practice was different at different epochs. The old and simple way was for the praetor to go to the spot himself to be present at the ceremony. Then when distances became too great and magistrates too busy, the litigants went there with witnesses to perform the ceremony, and came back into court.

Now what was done at the land? The ceremony was called, we know, *manum conserere*. Just in what it consisted we shall inquire presently, but I wish first to enforce the point — not generally recognized — that the *manus consortio*¹ applied only to land, or to land and other immovables. For observe first that it was something done out of court. The phrase *ex iure* invariably accompanies it, wherever it is mentioned.² The locution *in iure manum conserere* was evidently unknown to Gellius, except as an antiquity in the Twelve Tables. Now a thing done out of court could not apply to movables,

¹ We may allow ourselves this phrase, as a convenience, although it occurs in no ancient writer.

² Thus in the well-known passage of Ennius quoted Gell. XX, 10, 4 (and by Cicero in two places); in Varro L. L. VI, 64; Cic. de Orat. I, 10, 41; pro Murena 12, 26; Gell. XX, 10, 1 and 9; Probus in Keil's Gram. Lat. IV, p. 273; these (with Lactant. Inst. I, 1, 12) being all the occurrences.

for movables, Gaius tells us, were always brought into court. Secondly, both in Gellius and in Cicero's Murena—the only places which show anything about the application of the phrase—the talk is solely of land-litigation. When, as in Decemviral times, the act was performed *in iure*, it still had reference to land, for Gellius evidently means that the praetor went to the spot. And even in a third passage, Cicero de Orat. I, 10, 41, where the phrase is employed in a bantering metaphor (*te ex iure manum consertum vocarent quod in alienas possessiones tam temere intruisses*), the figure is that of a trespass on land. Finally, any remaining doubt should disappear on a comparison of the Murena passage with Gaius's description of the vindication of movables. I print the two dialogues side by side. Cicero, it must be understood, is quoting in a touch-and-go fashion, simply to illustrate useless legal verbiage.

GAIVS.

A. [*holding the slave*]. Hunc ego hominem ex iure Quiritium meum esse aio secundum suam causam. Sicut dixi, ecce tibi, vindictam inposui. [*Touches him.*]

B. [*also holding the slave*]. Hunc ego hominem, etc., etc. [*Touches him.*]

PRAETOR. Mittite ambo hominem.

A. Postulo anne dicis qua ex causa vindicaveris.

B. Ius peregi sicut vindictam inposui.

CICERO.

A. Fundus qui est in agro qui Sabinus vocatur . . . eum ego ex iure Quiritium meum esse aio.

[B. repeats the same formula.]

A. Inde ibi te ex iure manu consertum voco.

B. Unde tu me ex iure manu consertum vocasti, inde ibi te revoco.

PRAETOR. Suis utrisque superstitibus¹ praesentibus istam viam dico. Ite viam. [*They go.*] Redite viam. [*They return.*]

A. Quando te in iure conspicio, . . . anne tu dicis qua ex causa vindicaveris?

[B. Answer not given.]

¹ Compare Festus, p. 305 M.: *superstiles testes praesentes significat, cuius rei testimonium est quod superstitibus praesentibus i, inter quos controversia est, vindicias sumere iubentur*. For the meaning of *vindicicias sumere*, see p. 161 below.

No one can help seeing from this correspondence that *manus consertio* was to land what joint seizure and touching with the wand was to movable property, and that it was done out of court because it had to be done at the land itself.

The point established that "consertion of the hand" pertained to immovable property only, let us ask next in what the act consisted. We ought to know this from the chapter of Gellius (XX, 10) which has already been several times referred to, for Gellius wrote this chapter on purpose to tell us, and there is in it a passage evidently meant to give an explanation of the phrase. In its present shape, however, it passes the human understanding; one may read and re-read it, and still ask himself what *manum conserere* really was. We shall have to attack this perplexing passage directly, but we will put it off as long as we can. Meanwhile let us consider possible answers. The litigants evidently could not *pull* the land, as they could a man. They might, nevertheless, lay hands on it simultaneously. If *manus consertio* is this, it is identical with the act for movable property, an act to which, as we have seen, the name was never applied. But a different name implies rather a different act, and this brings us to another possibility, that the litigants joined hands over the land. Now 'link the hand' is the natural meaning of *manum conserere*. It is very hard to conceive it as meaning anything else. And for etymological reasons alone I cannot help having a strong conviction that this was the act performed. Herein I agree with Poste,¹ who says "the object grasped seems to be the hand of the adversary"; and I hope to show that Gellius's language confirms this view, and does not, as has been supposed by some, favor the other alternative.

Now we must address ourselves to the Gellius passage. It is as follows. After saying that he is going to tell us what he has found out about the meaning of the phrase *ex iure manum consertum*, he goes on, according to our manuscripts:—

7 *Manum conserere. Nam de qua re disceptatur in iure* [in re *added by editors*] *praesenti, sive ager sive quid aliud est, cum adversario simul manu prendere et in ea re omnibus* [sollemnibus *editors*] *verbis vindicari, id est vindicia. Correptio manus in re atque in loco praesenti*

¹ Gaius, 2d edit., p. 499.

apud praetorem ex duodecim tabulis fiebat, in quibus ita scriptum est :
 9 si qui in iure manum conserunt. Sed postquam praetores, propagatis
 Italiae finibus datis iurisdictionibus [these two words variously emended]
 negotiis occupati, pacisci [proficisci auctors] vindictiarum dicendarum
 causa [ad added by editors] longinquas res gravabantur, institutum est
 contra duodecim tabulas tacito sensu [consensu auctors], ut litigantes
 non in iure apud praetorem manum consererent, sed ex iure manum
 consertum vocarent, id est alter alterum ex iure ad conserendam manum
 in rem, de qua ageretur, vocaret, atque profecti simul in agrum, de quo
 litigabatur, terrae aliquid ex eo, uti unam glebam, in ius in urbem ad prae-
 torem deferrent, et in ea gleba, tamquam in toto agro, vindicaret.

The passage begins with two loose words, out of all connexion with their context. No probable way of connecting them with the foregoing or the following words has ever been suggested, and Hertz is undoubtedly right in assuming a lacuna after them. Now the careful reader will perceive that the promised definition of *manum conserere* is altogether lacking. The sentence beginning with *nam* is not this definition, although it has sometimes been taken to be, and writers have consequently inferred that *manus consertio* was joint seizure, and even that the joint seizure of movables described by Gaius was called by this name. This sentence does not even pretend to be a definition of *manum conserere*, but it does pretend to be a definition of *vindicia*. *Vindicia* cannot, however, be meant as a synonym of *manus consertio*, since it applies to land and movables (*sive ager sive quid aliud est*), whereas the *manus consertio* relates to land only. More than this, the *vindicia* here described cannot even include *manus consertio*. Possibly the term *vindicia* would, in its wider use, include the *manus consertio*, though I know of no clear case of this. *Vindictiarum dicendarum causa* in § 9 below is not one, for *vindicias dicere* is merely a technical phrase for 'pronounce judgment.' At any rate it seems quite certain that *vindicia* here is employed in a narrower sense, and designates a ceremony distinct from *manum conserere*. For in the first place, *cum adversario simul manu prendere* is irreconcilable with *correptio manus* in the next sentence (that is, the two phrases cannot designate the same act), but as we read on it becomes evident that *correptio manus* relates to the *manus consertio*. Secondly, this *vindicia* takes place in court (*in iure*), whereas *manus consertio* took place — except in the earliest times — out of court. I should not lay much stress on this in

iure, because the text is defective just here,¹ if it were not upheld by what follows in § 9. At the end of that section the custom, known also from Gaius, of the vindication of land by means of the *gleba* is mentioned. Let no one suppose that Gellius means this to be the *manus consertio*. For this takes place *apud praetorem*, whereas he has said just above that the *manus consertio* did not (*ut non in iure apud praetorem manum consererent*). There was, then, a vindication of land quite apart from the *manus consertio*—a vindication which took place *in iure* and was performed over a clod. Surely of this and of no other Gellius is thinking when, in § 7, he speaks of claiming land by joint seizure, and lumps it with the claiming of movables. *In iure* is therefore in all probability sound.

It is quite impossible, we see, that this *nam*-sentence in § 7 should be a definition of the *manus consertio* or have anything to do with it. The following words, *correptio manus* etc., certainly refer to it, but they simply give additional facts, and presuppose a definition. The definition must absolutely have preceded, and it is plain that the loose words *manum conserere* at the beginning are a remnant of the missing passage. In the light of the foregoing discussion we may imagine that the first two sections once read, in substance, somewhat as follows:—

Manum conserere est manum adversarii corripere in agro de quo litigatur; ita enim maiores nostri pro vindicia faciebant quae posteriore tempore in iure fiebat et volgo sic vocatur. Nam de qua re disceptatur in iure in re praesenti, sive ager sive quid aliud est, cum adversario simul manu prendere et in ea re sollemnibus verbis vindicare, id est vindicia. Correptio manus in re atque in loco praesenti etc.

There is still one incoherency in Gellius's account. The litigants, he tells us, when the praetor became too busy to go with them to the land, 'no longer did the *manus consertio* in court, but one summoned the other out of court to perform the ceremony. They then went together to the land, and'—what next? Joined hands, we expect to hear. No, but 'took a clod, brought it back into court, and vindicated over it there.' Gellius appears to mean that, although there was a summons *ad conserendam manum*, the consertion itself was entirely omitted

¹ It would obviously be open to us to write *disceptatur in re praesenti* instead of *disceptatur in iure (in re) praesenti*.

and a different ceremony substituted. They employed,—so we are given to understand—the clod-form of vindication for land, while retaining the verbiage of another, obsolete, form. But this statement, even if true, cannot be historically complete. Gellius evidently omits at least one intermediate stage. There must surely have been a time when the challenge to leave court *ad conserendam manum* was followed by an actual performance of the thing specified; the substitution of the clod-ceremony must have been later. But Gellius's language is, perhaps, capable of another interpretation; he may mean that both acts were performed,—the *correptio manus* and the bringing of the clod. The ceremony with the clod would then be an addition, not a substitution. Now a double process of vindication would seem to us needless; nevertheless such a thing might have been thought necessary at the period when the praetor first ceased visiting the land and witnessing the 'hand-grapple' in person. In itself this alternative is more probable than the first, whether it be Gellius's meaning or not.

I cannot forbear mentioning a third possibility. It may be that Gellius has confused two things; that vindication with the clod was really a matter quite apart from *manus consortio*, the one being employed in some cases, the other in others. It must be understood that the whole affair—clod as well as hand-grapple—was to Gellius a thing of the past. This is clear from the language of Gaius, a contemporary of Gellius, who uses the past tense in describing all these acts of vindication. Gellius, himself, at the beginning of the chapter, says of the words *ex iure manum consortum* that they are *verba ex antiquis actionibus, quae, cum lege agitur et iudiciae contenduntur, dici nunc quoque apud praetorem solent*, and goes on to describe the difficulty he had to ascertain their meaning. Though still in use, the words were a mere form, corresponding to no real act. Even at Cicero's time the same was probably true. From the dialogue in the *Murena* we may suspect that the whole visit to the land had become a fiction, the parties simply going a short distance and returning. The jurist L. Cincius, in a passage to be quoted immediately, speaks of the clod-bringing as if it were an obsolete custom, and Cincius lived at about Cicero's time. It would, therefore, not be an incredible supposition that Gellius, reading his lawyers' books, had got two processes confounded.

With this possibility in mind, we naturally turn to the scene in the Murena oration, to see whether it gives any hint of a clod. It certainly does not. With the return of the parties, the ceremony of vindication seems to be complete. However, it may be that Cicero simply skips this part of the process. One rather striking coincidence could be adduced in support of this opinion. In Festus, p. 305 M. (quoted in footnote on p. 156), we are told that litigants were bidden *vindicias sumere* in the presence of witnesses (*superstitibus praesentibus*). We should hardly know what *vindicias sumere* meant, were it not for the statement of Cincius (Festus, p. 376 M.), *vindiciae olim dicebantur illae quae ex fundo sumptae in ius adlatae erant*. From this it appears that the clod was called *vindiciae*, and that *vindicias sumere* is to take the clod from the farm. Now the command to do this *superstitibus praesentibus* reminds us strongly of the command of the praetor in the Murena scene (see p. 156), and suggests that in that command the fetching of a clod may be implied. On the other hand, it may be urged that the simple *manus consortio*, without the clod process, would also have required witnesses.

I can see no way of deciding positively among these three understandings of the matter, but confess to a leaning towards the second, — the assumption that in post-Decemviral times, when the magistrates gave up visiting the land, the clod ceremony was superadded to the other. This clod process was called *vindicia*, and was probably performed by joint seizure, as on a movable.

This discussion of the *manus consortio* has necessarily been a little complicated, and a word of recapitulation may not be out of place. The points made are these. *Manum conserere* was a form of vindication that related to *land* (and presumably other immovables), and corresponded to the joint seizure of movables. It was performed out of court, before witnesses, except in very early times, when the magistrate used to go to the land. The words naturally mean 'link the hand,' and Gellius calls the act *correptio manus*. We infer that the act was a joining of hands, and no statement of the ancient writers controverts this view. We may distinguish at least three periods of the usage. First the magistrate went with the litigants to the spot to see the 'hand-grapple' performed. Secondly the litigants went there with witnesses and performed it, and (if we have rightly chosen among puzzling alternatives) brought back a clod for

a second process in court. Thirdly the actual performance of these ceremonies was omitted, an empty form of words being still kept up.

The usual term for what we have called the 'joint seizure' of movables, as opposed to the *manus consertio*, appears to have been *vindicia*. But we may shrewdly suspect that it was originally called *adsertio*, *adserere*, — words which in the literary period were confined to a single kind of process, the *vindicatio in libertatem* or *in servitutem*.¹

We must not forget to speak of the variant *manu consertum*, which manuscripts give us in several places.² This may of course be nothing but archaic spelling. But it may also have been an actual form, used along with the other.³ Its meaning would be just the same. Either *consere mecum manu* or *consere mecum manum* might be said. In like manner *adserere alicui manum*⁴ and *adserere aliquem manu* were both known.

The interpretation of this hand-joining as a pulling-match is not absolutely necessary, and I have wondered at times whether it might not be taken as symbolizing a scuffle or a wrestling-match. This would be the form which a quarrel about land would naturally assume; each claimant would treat the other as a trespasser, and try to put him off the premises. But the fact that *one* hand was used seems fatal to this. The plural *manus* is never used in this locution. A pulling seems indicated after all, and we must suppose that it arose as a substitute for a free scuffle, suggested by the analogy of the pulling of movables. This hand-pulling, it is interesting to observe, became a common figure for a battle, as did the rope-pulling of the Greeks. The oldest occurrence of the metaphor, *contra conserta manu*, Plaut. M. G. 3, shows the singular, in agreement with the legal formula. Varro L. L. VI, 64, *manu conserere cum hoste*, also uses

¹ In the Oscan Tabula Bantina, the words *manim aserum* (= *manum adserere*) seem to be employed in reference to seizure of the person in execution for debt (*manus iniectio*).

² The Mss. give *manum* in Gell. XX, 10 in six places, also in Cic. Fam. VII, 13, 2. *Manu* in Varr. L. L. VI, 64; Cic. Mur. 12, 26 (twice); Gell. XX, 10, 9 (once). Both forms Cic. de Orat. I, 10, 41; Mur. 14, 30; Gell. XX, 10, 4; Probus in Keil's Gram. Lat. IV, p. 273.

³ Hardly, however, the only form. Note *ad conserendam manum* in Gellius.

⁴ Festus s.v. *sertorem* (p. 340), Paulus s.v. *asserere* (p. 25).

the singular, and so always Caesar, Nepos, and probably also Cicero.¹ Expressions like *manus consereret* first appear in Sallust and Livy, who, however, also use the singular.² It is hard to say whether this is a simple perversion of the original term, or is due to an admixture of a wrestling-metaphor. *Manus conserere* ('lock the arms') might have been said of the ἀφή of wrestlers, but there is no evidence that it was. Another faded-out metaphor based on the pulling-contest is *contendere, contentio*.

This inquiry has taken us far afield, but the patient reader will now understand the nature of the hypothesis — I repeat that it is only an hypothesis — by which I should like to account for the enigmatical Homeric expression from which we started. 'Faustrecht' is the oldest law, and the earliest administration of justice consisted simply in seeing fair play between combatants. The free fight gave way (with great saving to life and limb) to a regulated pulling; the disputed object belonged to him who could pull it away from the other man. The pulling was then extended to contests about immovables and abstract questions, the victory being his who could pull his opponent over a scratch. Then came interference of magistrates, and questions of δίκη and ius. But it was still thought needful that a form of pulling should be gone through, before the magistrate began his inquiry. To this point the Romans had got when we first know them, and this point, as I imagine, the Greeks had reached in the Homeric age, the difference being that the Greeks used a rope when a movable object was not in dispute, while the Romans did not. I am far from asserting that every civilized community has gone through all the above stages. But such, I conceive, was the course of things in ancient Italy and Greece.

There are various other difficulties in the trial scene in Σ, which we shall not attempt to deal with. The relation, for instance, of the ἱστωρ to the γέροντες, and the significance of the two talents of gold. Skilful discussions of these, by Hofmeister and Leaf respectively, may be read in the *Zeitschrift für vergleichende Rechtswissenschaft*, vol. II, p. 443 ff., and in the *Journal of Hellenic Studies*, vol. VIII, p. 122 ff.

¹ In the spurious oration *Antequam iret* (8, 20) occurs *manus conseratis*.

² Noteworthy is *conseruntque dextras*, Stat. Silv. 1, 6, 50.

I wish I could strengthen this surmise of mine by citing some survivals of the terminology of the supposed custom in Greek. There are indeed references to pulling-matches. One of these is the much-vexed passage Pindar Pyth. II, 90, *στάθμας δέ τινος ἑλκόμενοι περισσῶς*, where the meaning is 'dragging at some rope beyond their strength.' But I have not found anything that looks like judicial pulling. Nevertheless I will cite one group of words. The game called *σκαπέρδαν ἔλκειν* has been mentioned above (p. 152). Hesychius adds that *πάν τὸ δυσχερὲς σκαπέρδα λέγεται, καὶ ὁ πάσχων σκαπέρδης*. He has also a gloss *σκάπαρδος · ὁ ταραχώδης καὶ ἀνάγωγος*. That is, *σκαπέρδα* or *σκαπάρδα* meant 'tug-rope,' a desperate job was called a 'tug,' a man in straits a 'tug-puller,' a headstrong horse a 'tugger.' Now in a well-known fragment of Hipponax (Frag. 1 Bgk.), the poet calls on Hermes with the words *δεῦρό μοι σκαπαρδεῦσαι*. Above this last word, in the codex which contains this fragment, is written the gloss *συμμαχῆσαι*, which is right enough, for *σκαπαρδεῦσαι* certainly means 'pull on the rope for me.' Now there are three other Hesychian glosses that contain similar forms :

σκαπερδεῦσαι · λαιδορῆσαι.

σκαρπαδεῦσαι · κρίναι.

καπαρδεῦσαι · μαντεύσασθαι.

In the second, *σκαρπαδεῦσαι* is surely miswritten for *σκαπαρδεῦσαι*. Here one might imagine that there lurked in *κρίναι* an allusion to judicial rope-pulling, if it were not far more probable that all these glosses relate to the Hipponax passage, and are wild guesses about the last word in it. It seems hardly chance that all end in *-σαι*.

As a corollary to this discussion it may be pointed out that the proposed interpretation of Σ 501 makes it possible to separate formally the word meaning 'rope' from that meaning 'end.' Outside of Homer the word for 'end' is an *s*-stem, and with Σ 501 out of the way there is no reason why it should not be so in Homer. The form *πεῖραρ* can be restricted to the meaning 'rope.' In short, we may distinguish two words:

1. *πεῖραρ*, plural *πεῖρατα*, 'rope.'
2. { *πεῖρας* (Pindar), plural *πεῖρατα* }
 { Aeol. *πέρρας*, plural *πέρρατα* } 'end.'
 { Att. *πέρας*, plural *πέρατα* }

The Homeric occurrences of these words are :

‘Rope.’

Σ 501. Already discussed.

N 358. τοὶ δ’ ἔριδος κρατερῆς καὶ ὁμοίου πολέμοιο
 πείραρ ἐπαλλάξαντες ἐπ’ ἀμφοτέρωσι τάνυσσαν,
 ἄρρηκτόν τ’ ἄλυστόν τε, τὸ πολλῶν γούνατ’ ἔλυσαν.

A difficult passage. I incline on the whole to understand a rope-pulling between the two armies helped by the gods,—substantially Heyne’s interpretation. Ἐπί then goes with τάνυσσαν. This conception is strongly suggested by the expression ἔριδος καὶ πολέμου πείραρ, especially when the similar phrases in Δ 336, O 413, M 436, Y 101,¹ Ξ 389, Π 662, are taken into account. In all these places there is the underlying idea of a pulling-match. The difficulty is that ἄλυστον in the next line is irreconcilable, and if we adopt this view, verse 360 must be bracketed as a later addition.²

ε 289. ἐκφυγίειν μέγα πείραρ διζύος, ἧ μιν ἰκάνει.
 ‘Noose of tribulation.’

H 102. αὐτὰρ ὑπερθεν
 νίκης πείρατ’ ἔχονται ἐν ἀθανάτοισι θεοῖσιν.

The gods hold the ropes which decide victory. A ‘tug of war’ is certainly intended here.

H 402, M 79, χ 33, 41. δλέθρον πείρατ’ ἐφήπται (ἐφήπτο).

The ‘noose of death’ is fastened to them. The metaphor from snaring birds or animals.

Z 143, Y 429. ἄσσον ἴθ’ ὥς κεν θᾶσσον δλέθρον πείραθ’ ἵκηαι.
 ‘That thou mayst be caught in death’s noose.’

¹ Here, however, τέλος does not mean ‘rope-end,’ but πολέμου τέλος is used as in Π 630.

² The only possible alternative is to revert to the conception of older editors, and understand a ‘noose of destruction.’ I should then understand that Zeus and Posidon ‘throw reciprocally (that is, each to the other side, ἐπαλλάξ) the noose of war, and tighten it round Greeks and Trojans.’ Two nooses would, of course, be intended. I do not feel sure that this is not right. Quite impossible, to my mind, is the complicated explanation which has found favor with most recent editors, by which the two gods pull at opposite ends of a rope in which the combatants are somehow implicated. This is meaningless and corresponds to nothing in actual life.

μ 51, 162, 179. ἐκ δ' αὐτοῦ πείρατ' ἀνήφθω (ἀνήπτον).
'Let the ropes be made fast to the mast.'

γ 433. ὅπλ' ἐν χερσὶν ἔχων χαλκήϊα, πείρατα τέχνης.

The smith's tools are called the 'ropes of his art'—a figure borrowed from seamen's parlance. So our figurative expression 'know the ropes.'

Ψ 350. ἐπεὶ ὦ παιδὶ ἐκάστου πείρατ' ἔειπεν.

Nestor 'showed the ropes' of each part of the race to Antilochus. The metaphor as in the last.

'End.'

Ξ 200, 301, δ 563. πείρατα γαίης.

ι 284. ὕμῃς ἐπὶ πείρασι γαίης.

λ 13. ἡ δ' ἐς πείραθ' ἴκανε βαθυρρόου ὠκεανοῖο.

Θ 478. οὐδ' εἴ κε τὰ νείατα πείραθ' ἴκηται.
γαίης καὶ πόντου.

ψ 248. οὐ γάρ πω πάντων ἐπὶ πείρατ' ἀέθλων
ἤλθομεν.

As the plurals of these words agree in form, so do the verbs derived from them: *πειραίνω* 'fasten,' 'bind' (χ 175, 192; cp. Hymn. Hom. III, 48), and *πειραίνω* (= *περαίνω*) 'complete' (μ 37; borrowed Soph. Trach. 581).

It will be perceived that in the above distribution, we have made more of the 'rope'-meaning than is ordinarily done, and recognized it in more passages. Modern editors, it seems to me, show a certain disinclination for this meaning, and will admit it only under compulsion. They follow in this the ancient interpreters of Homer. I may be wrong about one or two places. Only I must enter strong protest against one thing,—a straddling interpretation, which assumes both meanings (say 'rope' and 'issue') at once. Either the word means 'rope' in a given place or it does not.

With *πείραρ* 'rope' thus formally distinguished from *πέρας*, its etymology becomes a separate question. It *may* be an equivalent formation from the same root, with a specialized meaning. It is just possible to get from 'end' to 'rope-end,' if we suppose the word to

be a technical sailors' term. This would differ but slightly from the common view, which throws the two words entirely together. Merry and Riddell on μ 51 make a vigorous plea for this. They cite *endje* as a German sailors' term. 'Rope-end' will certainly fit (instead of 'rope') in all the Homeric places listed above, except N 359, where both gods (if we accept the tug of war interpretation) pull on one πείραρ. But πείραρ may also be wholly unconnected with πέρας. Doederlein suggested that it might have to do with πείρις 'basket.' The notion of 'plaiting' would be common to the two.

However this may be, both the meaning 'rope' and the form πείραρ disappeared from Greek at an early time. Πείραρ indeed is not found after Homer; πείρατα is used in the Homeric Hymn to Apollo 129, of the swaddling-bands of the infant god (λύοντο δὲ πείρατα πάντα). Also, still with the 'rope'-meaning, in a verse of an unknown poet, Stob. Ecl. I, 2, 9, Ζεὺς ὁ καὶ ζωῆς καὶ θανάτου πείρατα νωμῶν.¹ Pindar's πείρατ' ἀέθλων δείκνυνεν, Pyth. IV, 220, looks back to Ψ 350 as well as to ψ 248. It is hard to tell which meaning the poet had in mind. Not quite so doubtful is πολλῶν πείρατα συντανύσαις ἐν βραχεῖ, Pyth. I, 81. Fennell recognizes that this somehow pertains to the "handling of ropes"; Gildersleeve suggests that the twisting of strands by a ropemaker is meant. But the context of this last passage warns me to desist.

¹ Put by Nauck among the Tragic Adespota (472). But is it not a dactylic hexameter, Ζεὺς (γάρ) ὁ καὶ θανάτου καὶ ζωῆς πείρατα νωμῶν?

HERONDAEA.

BY JOHN HENRY WRIGHT.

I.

PUNCTUATION IN THE PAPYRUS.

I. *The Spaces.* — It is an important peculiarity of the papyrus manuscript of the Mimiambi of Herondas recently discovered (Papyrus No. CXXXV., British Museum), that, while as a rule the letters of the several verses are written continuously, without break or pause between the different words, now and then — in about twelve per cent of the verses — slight breaks or blank spaces do occur, never amounting however to more than the space ordinarily taken up by from one to two of the letters of average breadth. The significance of these breaks for the punctuation of the text was first emphasized by Blass, and has been recognized by several critics of the poet; but thus far only sporadically. In this article I propose to present all the examples, and to discuss the doubtful ones, not neglecting at the same time the examination of a few related topics, important in their bearing on the text-criticism of our author.¹

It should be observed, in the first place, that these breaks are never intended to mark words as words, nor to suggest the proper combinations of letters into words in ambiguous instances: this work is performed, but without system, incompletely, and only very rarely directly, by the marks of the rough breathing,² the accents,³ the coro-

¹ For convenience ordinary type will be regularly used in the notes for the readings of the manuscript. It is to be regretted that in the text the font of inscriptional type so imperfectly represents the cursive majuscules of the papyrus.

² Only the rough breathing is written, and always in an angular form (ʰ), except in the late οὐδ'έτ', VI. 3. The cases are: II. 70 (ὥραγησ); V. 20 (ἀρεναι); VI. 25 (ἡ Βιτᾶτος); VI. 68 (ἀμ[λλ]η); VII. 46 (ἀ).

³ The accents, acute, circumflex, and grave, exhibit interesting peculiarities. The circumflex and acute are used with many proper names, but not with all; also to distinguish between words spelled alike but differently accented, and to indicate the correct grouping of letters into words, etc.: e.g., I. 29 (θεαι, not θεαι); I. 85

nis,¹ and perhaps once or twice by the use of the dot or point.² The last, however, has a more extended use — in perhaps a dozen examples, collected below — as a sign of punctuation (στιγμή), having here a value not wholly unlike that of the spaces, but not so strong as that of the παράγραφος.

Punctuation within the verses is indicated mainly by these spaces: indeed, these spaces have no value except as signs of strong interpunctuation, and they always have this value, when not accidentally made.

(μά, not μά); *ibid.* (οσσού = ὁι σοῦ, not ὅσσου); IV. 42 (αὔτη = αὔτη, not αὐτή); II. 1 (ἐστέ = ἐστέ, not ἔστε). At V. 41 (ὀδῆ) perhaps the accent may indicate ὀδῆ. At II. 9 (ἡμεας) the accent seems to suggest the synacrisis of the final syllable (Crusius): and in V. 49 the acute on the ultima (αἰκοναίς) may be intended to indicate a rising tone of voice, necessary in a question (Diels).

The grave accent regularly appears to be used to provide against misapprehensions. The examples are I. 60 (τάταλι . . . : to show that this is not τατά; it also shows that we have a longer word here than τατά); I. 76 (Πυθω δέ); I. 70 (ῶναγης: ὦ + ἀναγής, not ὦν κτλ.); II. 1 (ἐστέ: ἐστέ, not ἔστε); II. 24 (ἐμ': ἐμέ, not ἐμά); III. 74 (πέρνας: i.e. πέρνας, not πέρνας); IV. 91 (πύλαων: i.e. πύλων); VII. 46 (ἀ: perhaps taken for article — wrongly; hardly "aporiae indicium," Crusius).

¹ The coronis (´), usually written at the top of the line (at I. 15 and II. 83, at the bottom), always appears to indicate elision at the end of words. It seems to have been put in by the first hand, except at VI. 3 (οὐδ'έν). The other cases are: I. 15, μυῖσσον = μυῖα ὄσον; II. 24, ἐμ'ου = ἐμ'οῦ = ἐμέ οὔ; III. 49, καλῆθιν' = κάληθινα; IV. 5, κῶντερ = κῶντερ = καὶ ὦντερ; IV. 16, ἀλεκτὼρ'ιγτρα = ἀλεκτῶρα ἰγτρα; IV. 41, κυδίλλ'ιουσα = Κυδίλλα ἰούσα. The only doubtful case is II. 83, καυτοστας,αυτου: this must be καὶ αὐτὸς τὰ σὰ αὐτοῦ, hardly τὰ σεαυτοῦ, certainly not, in the light of all our examples, τὰς αὐτοῦ (Doric short a). The cases show that the mark is not necessarily used, as in the Codex Alexandrinus, to separate words as words, nor like the διαστολή (ὑποδιαστολή): ὅταν διαστείλαι καὶ διαχωρίζαι ὀφειλωμέν τινα λέξιν (e.g., ἔστιν, ἄξιος, not ἔστι Νάξιος: Bekker, *Anecd. Graeca*, II. p. 675); some of the examples, however, might be explained as instances of the diastole: e.g., II. 24 (ἐμ'ου, not μου), III. 49 (καλῆθιν', not κάληθινα), etc. Cf. Gardthausen, *Griech. Paläographie*, pp. 273 f.

² In *Proem.* 11 (Cr.) ταυλλ-αἰδιν, the point appears to be intended only to mark off the words τὰ κυλλὰ and αἰδιν: it can have no force for punctuation here; cf. IV. 50 (εσσετ-ἡμερα), but see p. 182, note 1. (In I. 3 [τις] the dot is merely a part of the sigma: likewise at II. 6 [κλ'αυσαι], the mark above the λ is part of an unfinished α, begun too near the λ; cf. I. 51; at VII. 48 [ἄων], the mark on ο is part of a φ in the preceding line.) For some remarks on the use of the signs (´, ´) see below, pp. 177. 178 notes.

An examination of the photographic facsimile of the manuscript discovers about one hundred and ten cases of such intentional spacings. Of these not more than from two to six are in any way ambiguous, and a fair consideration, it seems to me, would deny ambiguity to all.¹ The remainder, over one hundred and four, are nothing but indications of punctuation, for which we have in our modern editions our various signs. A classification of these examples according to the punctuation adopted in the latest text-edition of Herondas (*Bibliotheca Teubneriana*: ed. Otto Crusius, 1892), which errs by no means on the side of excessive punctuation, yields the following groupings:—

a.—The breaks accompany a *change of speaker*² in the dialogue at I. 7* (ἔστιν; Γυλλίς), 20, 82; II. 48; III. 58, 78*, 81, 82, 87, 93; V. 31, 55; VI. 15, 17, 19*, 22*, 23*, 25; and are thus represented by our period, colon, dash, or question-mark (the last indicated by the *).

b.—They stand at the end of a question in the examples starred above, and in the following additional cases where no change of speaker occurs after them: I. 9, 48 [?]; III. 43, 60; IV. 57 (perhaps an exclamation, οἶα ἔργα); V. 10, 18, 41, 75; VI. 10, 44, 45, 75, 76; VIII. 4, 5. In these cases they are represented by a *question-mark*.

c.—Many have the value indicated by Crusius by a *period*: most of the unstarred cases under *a*, and the following additional examples: I. 8, 79; II. 68; III. 59; IV. 33; V. 20, 56, 66, 67, 74; VII. 4, 117.

d.—They have the value of a *colon* at I. 15, 66, 82; III. 11, 26; IV. 21, 55, 92, 93; V. 6; VI. 5, 31, 61; VII. 65, 128; VIII. 11; and of something like it at IV. 58.

¹ The apparently exceptional cases are discussed below; see pp. 173 f. Occasionally, but extremely rarely, when the large bulk of the writing is considered, we find other slight breaks. In most of these instances the letters of a verse have been written more sprawlingly than usual, and thus give the appearance of spacing where no pause is intended. I have observed only these examples: γὰρ, ἡμέων (I. 46); ποθέων (I. 60); μετελθεῖν ἡνθύρηην (II. 50); κείνον δέ (IV. 30); σῆτος (V. 43); τοῦτον (V. 58); ἡμέων (VI. 82). (In the apparent Φιλαινον, I. 5, the letter iota has disappeared, leaving only a slight trace.) Such is not the explanation of the pause in I. 55, discussed on pp. 186 ff.

² Change of speakers is usually indicated, but with many omissions, by the παράγραφος; see pp. 178 ff.

e.—Crusius represents them by a *comma* at I. 13 (*bis*), 67, 89; II. 22, 49, 77; III. 49, 81 (παῦσαι_λικαναί); IV. 43, 46, 90; V. 9, 25, 34, 42 (τοῦδε_λκαὶ σύ), 53, 69 (τατί_λἄλλά), 70; VI. 3 (αὐτήν_λσύ), 12, 18, 49, 77, [96, after τε]; VII. 57 (*bis*), 58 (before κανναβίσκα), 60 (after ἀκροσφύρια), 61 (after ἔφηβοι), 98, 110.

f.—In the following verses, where the spacings are indicated by the sign of caret, Crusius inserts no mark of punctuation; but no one can deny that at least a strong phrasing, if not punctuation, was distinctly intended: II. 2 (οὐκ ἐστὲ | ἡμέων κριταὶ δῆκουθεν_λοὐδὲ τῆς δόξης); III. 10 (τὸν μισθὸν αἰτεῖ_λκῆν τὰ Ναννάκου κλαύσω); IV. 83 (εὐμενὴς εἴης | καλῶς ἐπ' ἱροῖς ταῖσδε_λκαὶ τινες τῶνδε | ἔασ' ὀπνιγται); IV. 42 (οὐ σοὶ λέγω_λαὐτῇ τῇ . . . χασκούση); and 55 (αὐτῇ σύ_λ μείνον); III. 25 (τριθήμερα Μάρωνα γραμματίζοντος | τοῦ πατρὸς αὐτῶ_λ τὸν Μάρωνα ἐποίησεν | οὗτος Σίμωνα); IV. 24 (οὐχ ὁρῆς κείνα | ἐν τῇ βάσει_λτὰ γράμματα; i.e. 'Don't you see those [things] on the pedestal, the letters?'); perhaps also IV. 59 (τὸν παῖδα δῆ_λ(τὸν) γυμνόν).

At III. 80 there is a pause which taken in connexion with the corrections at this point is extremely significant. As first copied, uncorrected, vv. 79, 80 read (in part): (79) ITICOIZWHN (80) ΦΕΡ ΟC-ACANHKAKHCΘENHIBYPCAI. The corrector, evidently the first hand, having previously designated 80 as corrupt (by an oblique line in the margin opposite ΦΕΡ; see p. 181) sets himself to correct it. He puts a mark of erasure over the N of ZWHN (superior dot); writes in, in the upper part of the space after ΦΕΡ, the letters ΕΙΝ; and draws his reed through the two l's (at CΘENHI mistakenly; at BYPCAI apparently correctly; probably these l's were earlier cancelled by the copyist, as he wrote). These facts show that the original manuscript from which the papyrus was transcribed read something as follows, of course metrically an improbable reading:

METROTIME (*to the master*). εἴ τί σοι ξύην,
φέρ',—ὅσας ἂν ἡ κακὴ σθένη βύρσα :

i.e. 'If I am anything to you (cf. V. 70), come,—[give him] all the blows his vile hide may bear.' The corrector, however, so radically modifies the text that it seems obvious, either (1) that the manuscript, at the time it was copied (for the hands in ΕΙΝ and ΦΕΡ are the same), was corrected by comparison with another manuscript containing different readings, or (2) that our copy was made from dictation,

the scribe not distinctly hearing the words. The second alternative cannot be adopted; see p. 183, note 2. The first alternative is supported by other inserted readings. Now the reading *φέρειν* could not have been in the original: otherwise the space after *φερ* would not have been made. We infer accordingly that in the manuscript used for correction the text read:

METROTIME (*to her son*). εἰ τί σοι ζωή,
φέρειν ὄσας ἂν ἡ κακὴ σθένη βύρσα.

'While your life holds out, you'll have to get all the blows your vile hide can stand (or that the cowhide is good for).'

There are now left six cases, which upon first examination appear to be exceptions to the law that spacing always indicates punctuation.¹ These are I. 1 and 64; V. 68; VII. 110 and 118; and VIII. 3. (1.) In the difficult and corrupt passage I. 64 we are not shut up to one reading; the space after *πρήξεις* favors a reading like that first proposed by Crusius: ἀ πρήξεις, ἡδὲ ἐστὶ κτλ., or Blass's δοιὰ πρήξεις, ἡδονὴν κτλ., rather than Bücheler's or Crusius's in the text-edition, although it is not wholly impossible with the latter.² (2.) At VII. 118, the papyrus reads: ΥΩΡΗ (118) ΑΡΗΡΕΝΟΤΤΑΗ ΒΟΥΚΟΛΑΚΤΙ- CACYMAC. Bücheler's ψωρή | ἄρηρεν ὀπλή, βοῦς ὁ λακτίσας ὑμᾶς — 'scabra congruit ungula, bos pressit vos calce' — gives excellent sense, besides preserving the punctuation, and therefore may be preferred to Crusius's ψωρή | ἄρηρεν ὀπλη βοῦς ὁ λακτίσας ὑμᾶς — 'Der Ochs der euch versohlt hat, führt eine räudige Klaue.' The cases VII. 110, V. 68, and VIII. 3 belong together. (3.) In VII. 110 (ἔχεις γὰρ οὐχὶ γλᾶσσαν, ἡδονῆς δ' ἡθμόν), there is a strong rhetorical pause before οὐχὶ whereby οὐχὶ γλᾶσσαν becomes parenthetical. (4.) At V. 68 (κατηρτήσθω οὕτω κατὰ μνὸς ὥσπερ, ἡ Δάου τίμη), the interesting pause seems to be a rhetorical one, due to the verb that must be supplied, of which τίμη is subject. (5.) In VIII. 3 (ἡ προσμενεῖς σύ, μέχρι σευ, ἡλιος θάλψει | [τὸν κ]υσὸν ἐσδύς), the space is not large and may be accidental, but a rhetorical pause is quite probable here also, especially if we read μέχρις εὔ. It is not unlikely that the passage is

¹ Among the exceptions I should not include I. 55 (ἀδικτος ἐς Κυθηρίην, σφρηγίς); see below, pp. 187 ff. The text at VIII. 28 ([ἀ]παλέσθαι, κη: *Frag.* 2. 7), and at *Proem.* 9 (δευτερῇ, γν) is too fragmentary to be taken into consideration.

² Diels proposes πρήξεις, ἡδέως δὲ τερφθείη.

slightly corrupt, and that the pause may be not original.¹ (6.) There remains I. 1 (*ἀράσσει τὴν θύρην, τις· οὐκ ὄψει | εἰ κτλ.*).² If we are to adopt this punctuation as one originally intended in thought, we may suppose that the scribe, by whom the original was made of which our manuscript is a transcript, was misled by the form of *τις*: he took the pronoun with the *οὐ* as an interrogative beginning the sentence, and therefore spaced it off from the preceding word (cf. IV. 21; VI. 18). Our scribe merely copies what he has before him.

Of the six doubtful cases, then, one is probably due to a copyist's mental confusion; two cease to be exceptions upon the adoption of otherwise approved readings; and three, if not purely accidental, likewise cease to be exceptional if we admit the possibility of the

¹ The synizesis of *ev* + *η*, across a pause in the sense, is not an objection: cf. III. 81 (*παῦσαι, ἱκαναί*), and IV. 50 (*μαρτύρομαι, φημί· ἔσσει' ἡμέρη κείνη*). But the place is otherwise open to criticism, and from several points of view appears to be corrupt. As it stands it would probably be better to take it as *μέχρις εὐ ἥλιος θάλλει* (for *εὐ* compare VII. 123, — where read *τὴν . . . βαλτην | θάλλουσιν εὐ δεῖ' ἴδον . . . καὶ βλέπειν* — and for the position of *εὐ* compare also Dem. Cor. 144, *εὐ πρᾶγμα συντεθέν*, or Plat. Rep. I. 329 C, *εὐ οὖν μοι καὶ τότε ἔδοξεν ἐκείνος εἰπεῖν*); or, possibly, *μέχρι σ' εὐ θάλλει*. But the synizesis *ev* + *η* is perhaps too harsh to be allowed even to Herondas. The papyrus has only one other instance, *τό μεν αἷμα* (V. 7), but a similar synizesis in *κετεῦω* (III. 71) was avoided by the corrector by erasing the *v*. And at II. 43, where *μέχρις οὐ* — a not dissimilar diphthong, though elsewhere freely suffering synizesis — is used, hiatus is permitted (*μέχρις οὐ εἶπη*). Perhaps even *τό μεν αἷμα*, in V. 7, is an analogical form, and should be written *τό μεν αἶμα*: compare *τέο* in VIII. 1 (*τεῦ*, II. 98) and *σέω* *πρήξις* (= *σέο ἡ πρήξις*, Cr.), VII. 96, if reference may be made to so problematical a passage. If, now, we reject the present reading because of its extraordinary synizesis, the words will be seen to be an easy palaeographical corruption of *ΜΕΧΡΙCOYΗΛΙΟC* (cf. *μέχρις οὐ εἶπη*, II. 43, and *ἄχρις ἥλιος δύνῃ*, II. 88), or, since that combination is objectionable because it made hiatus at II. 43, and must not here, *ΜΕΧΡΙCOΗΛΙΟC* (cf. *τ[οῦ ἡλ]λου δύντος*, II. 13). In the latter case the *CO* might have been taken for *EO* (Cobet, *Nov. Lect.* pp. 178 f.), and this easily written into the more familiar *EY*. This process was, of course, helped by the *ΜΕΧΡΙCΕΥ*, a few lines below (*μέχρι σευ*, but perhaps *μέχρις εὐ*). In this line (VIII. 3) we can hardly make the letters = *μέχρις εὐ*, as an hyperionism for *μέχρις οὐ*, under the influence of the foregoing *μέχρι τέο* (v. 1).

² Can we take *ἀράσσει* impersonally, and read the verse: *Θρήισσα, ἀράσσει τὴν θύρην, τις; οὐκ ὄψει κτλ.*? (Cf. Kühner, *Ausf. Gramm.* II. p. 30.) It is perhaps better, however, to explain it as above, if after all the pause be not an accidental one, like those in *οὐ, τοι* (V. 43), and *τοῦ, τον* (V. 58) mentioned at p. 171, note 1.

use of the space to suggest merely a slight rhetorical pause, such as was regularly indicated by the *στιγμὴ μέση* in the writing of the Roman period.¹

It may, therefore, be reaffirmed with emphasis, that in the Herondas papyrus the blank spaces between certain words in the verses always have the value of strong interpunctuation, and must be carefully heeded by all who would seek to construct the text or to interpret the poet.

But the punctuation by spacing goes only a little way. If it had been applied consistently and completely, we should have had more nearly a thousand than a hundred cases to register.

II. *Στιγμαί*. — Punctuation is also indicated in the papyrus by the use of the dot or point in the line. This method of punctuation has not the significance of the former for purposes of text-criticism, since it may be in large part the arbitrary work of later correctors or readers, whereas the spacing must have been made by the original scribe, and can have been only a reproduction of what he had before him. Punctuation according to spacings may go back to Herondas; but that by points hardly.

Some of the points or dots in the text may be mere blots, — for we find others like them in the middle of words, or hanging on the tips of thickly-written letters, — or even parts of letters detached from the body of their letters on fibres of papyrus slightly shredded off. Again, very frequently the intentional dot does duty in Herondas to indicate omission or erasure, and is then regularly placed above the letter or letters to be rejected: occasionally it is also placed, both above and below, and once in a while at the right side or on both sides² of the objectionable word or letters. In the latter position it may lead to a confusion with the use of the point for punctuation. Actual cancellation is effected by drawing a line obliquely, or sometimes horizontally, across the undesired letters, syllables, or signs: it is sometimes combined with omission as indicated by a superior dot

¹ On the use of the *μέση* see Blass, *Griechische Palaeographie*, in I. Müller's *Handbuch*, I². pp. 311, 312, 323.

² For example at I. 50 (*Παραικου·Γυλλου·*), where the marginal *Γρυλ(ος)* is to replace the word in the text. Possibly the point in II. 98 (after *Φοιβη*) has a like value; but its mate is not visible at the beginning of the word, nor has any substitute or gloss been written on the margin.

(see IV. 67). It is not unlikely, though not certain, that this cancellation was done by the first hand, in the progress of his writing: see IV. 83, where in ΕΜΠ the Μ is cancelled, and the correct Π placed just after, though it is possible that the scribe here wrote out ΕΜΠΡ at first. The dots indicating omission were added on the revision by the corrector, who was apparently the first hand (see on III. 80, above, pp. 172 ff., also p. 184).

The points as distinctly used for punctuation¹ may be grouped as follows: cases where they are by Crusius represented by periods, by interrogation-points, by colons, and by commas. Where the *στιγμή* falls at the close of the verse it is designated in my list by an asterisk.

a.—Periods: I. 3 (ΕΓΩΔΕ·; point at middle); I. 4 (ACCON*); I. 8 (ΔΟΥΛΗ·; middle); I. 82 (ΤΕΙΘΙ·; middle); II. 98 (ΦΟΙΒΗ·; perhaps middle); VI. 5 (ΜΕΤΡΕΩ* with Η· written above Ε; unless the point here merely indicates erasure of Η on second thoughts [so Crusius, and cf. III. 62], it means that we are to read ΜΕΤΡΗ· with full pause, and not ΜΕΤΡΗΩ); VII. 76 (ΤΡΗΞΙΓ·: if this be a *στιγμή*; if a line, there are no similar uses in the papyrus); VII. 113 (ΘΩΜΕΝ·).

b.—Question-marks: I. 3 (ΘΥΡΗΝ·; interrupted question); I. 3 (CΥ·); I. 4 (ΤΡΟΧΕΛΘΙΝ·).

c.—Colons: IV. 21 (ΑΓΑΜΑΤΩΝ·); VII. 114 (ΤΑΞ·; middle).

d.—Commas: I. 8 (ΤΙ·; middle); IV. 37 (ΒΑΤΑΛΗΝ·).

A glance at this list shows at once the futility of attempting to identify these points with any ancient system of *στιγμαί* (*τελεία*, *ὑποστιγμή* [and *μέση*]). They are inserted with little discrimination. Thus all three are used to indicate a strong pause; the "*τελεία*" at I. 4 has very strong force; less at IV. 21. The "*ὑποστιγμή*" is weak at IV. 37, less weak at I. 3, and rather strong at VII. 113. Probably the papyrus is not carefully enough written to justify us in very nice distinctions between the "*μέση*" and either of the others, but a difference is certainly to be observed between the top and bottom of the line as places to receive the points. And we must also bear in mind that some of these cases may well be those of accidental

¹ The following cases appear to be accidental: in V. 21 the point under μ of *μνασ*; and the points on both sides of λ in VIII. 42 (ο·λ·ηι), where the sense demands οὐλη.

blots. Probably some early owner of the papyrus began with the good intention of putting the points in (διαστίξαι τὸν Ἡρώνηδαν), but soon gave up the task. It will be observed that eight out of the thirteen or fourteen στιγμαί are found in the first mime, and most of these near the beginning.

II.

THE παράγραφος AND ὀβελός.¹

I. Παράγραφος. — A short horizontal line, drawn distinctly, firmly, and usually with full reed, is frequently met with in the papyrus, and has various values.² Within the verses and between the lines, where it occurs rarely, it is placed close above certain letters, regularly vowels: in this position so miscellaneous seem to be its functions that we cannot speak more definitely of it than to say that it calls attention to something noteworthy in the letters or words marked.³

¹ On this name see p. 180, note 4.

² The sign (˘) is used five times in Herondas, and, as — with perhaps one exception — it is always over short syllables, it may be identified with the sign invented by the Alexandrine metricians to indicate a short syllable (βραχεία, πρῶτος χρόνος). The sign cannot be taken as a rhythmical sign, since while ordinarily in the *ἄρσις*, at VII. 108 it stands on one of the resolved feet in the *θέσις*. The cases are I. 50 (ὁ Μαρδὸν[ι]της); I. 56 (Μῆσης); IV. 30 (τὸν γέροντα; πρὸς Μοιρέων); VII. 108 ([δύ]ραιτό μ' ἐλάσαι); and the puzzling IV. 62, which has given rise to a spirited controversy (see Crusius, *Philol.* 50 (1891), p. 446; Ludwig, *Berl. Phil. Woch. S.*, 1892, pp. 642, 1349, and L. Müller, *ibid.* p. 995). Here the original draft had ΤΥΡΑΚΤΟΝ, or ΤΥΡΑϚΤΟΝ: over T a P is written and upon T and A stand the marks ˘, ˘. Meister's *πύραστρον* is now adopted by both Kenyon and Crusius. The first syllable of the word, contrary to usage, is here metrically long: hence it is marked; it also has the acute accent. The second sign perhaps refers to the original or natural quantity of the syllable in *πύραστρον*, which — on this theory — the scribe must have thought he had before him, in his original: otherwise the sign is unintelligible to me. For *πύραστρον*, cf. *πυράρη*, *Anth. Pal.* VI. 117.

³ The examples of this sign (˘) in the papyrus are the following: over *iota*, III. 74 (ἰσ = *els*); III. 79 (ἰ = *el*, followed by enclitic); V. 5 (προφασῖσ = *προφάσεις*); V. 18 (φερίσ = *φέρεis*, Cr.: probably *φέρ' els*); *Proem.* 11 (ἐπ' ἔουσι = ?); IV. 43 (ματῖν, a short vowel: perhaps a mark of cancellation?); VI. 25 (Βιτᾶτος, a short vowel); and perhaps in the obscurely written I. 82 (δεῖξον = ?), unless here it be meant for the superior dot indicating erasure, the scribe mistakenly thinking of *δέξο*. The only other cases are: over *alpha*, III. 79 (τᾶτᾶ), and

But the chief use of the horizontal line in the papyrus is to indicate a change of speaker in the dialogue, and in this function it may be identified with the very ancient sign known as the *παράγραφος*. In cases of this sort it is always placed just under the beginning of a line, slightly projecting into the margin, and shows that within the line

IV. 56 (*καῖνιθ*), both at the beginning of the line; over T, IV. 62, *πύραστρον* (*πύρατρον*?) cited in the previous note.

It will be noticed that, in all the cases where the sign is used with iota having the value of *ei*, there exists a second form, with which confusion might arise: thus at III. 74, *éis* and *eis*; III. 79, *ei* and *ei*; V. 5, *προφάσεις*, not *πρόφαις*. Since *ἐπεὶς* is at IV. 28 given by *εμς*, it is probable that a different expression was meant in the *φερῖς* of V. 18, i.e. *φέρ' eis*. The form at *Proem.* 11 (*εἰόνουσι*) is enigmatical. Crusius takes it for *ἐπιόνουσι*, but Diels and Bücheler render it by *ἐπόουσι*. Perhaps the mark over the iota merely calls attention to the anomalous quantity of the vowel.

Since the sign (°), as used in the papyrus, may with probability be identified with the Alexandrine sign for the short syllable, one is tempted to connect this sign with the Alexandrine (°) used to designate a long syllable (*μακρά, χρόνος δισημοί*). But the data will not support such a conclusion. The sign has not metrical value, since it stands over long and short (IV. 43, VI. 25) syllables without distinction. Nor has it rhythmical value, since, while on syllables under the *θέσις* at [I. 82], III. 74, 79, IV. 62, V. 18, and *Proem.* 11, in an equal number of cases its syllables are in the *ἀφαις* (III. 79; IV. 43, 56; V. 5; VI. 25). Its peculiar use in connexion with duplicate values of iota which could not be or had not been differentiated by the addition of an accent, its possible use with *δαῖζον* (I. 82) taken in an unusual sense, and its erratic application to other syllables lead one to believe that, as inserted by the scribe of the papyrus, it was nothing more than an intermarginal "obelus," intended to call attention to dubious or peculiar forms and uses. Unlike the "obeli" discussed below, these cases were probably a tradition from the original manuscript (see pp. 180 ff.).

Several apparent "obeli" of this sort require attention. In I. 7 the mark after *καλι* is hardly a "paragraphus" (Crusius), at least in the sense of a sign indicating punctuation; it is rather part of the upper bar of the following *τ*; the papyrus fibres (vertical) have shredded loose at this point, and sagged down, as a comparison of the writing above and below will demonstrate. — The mark over the first *a* of *Mārā-* in I. 50 does seem to me an intended °; it is rather a thickened fibre of the papyrus. — At V. 17 (*μῶρα*), the mark is probably an acute accent, the scribe taking the word as *μῶραν*, not *μῶραν*. — The peculiar line over the first *ν* in VII. 77 (*τὸν τῖμον*) is nothing more than a part of the following *τ*. — In II. 73 the line over the much blotted *τ* (?) in *Φαυ[]τ[]* must be the remnant of a letter suggested for the place, perhaps a sprawling *τ*. — In I. 54 the line over *τ* in *τ[ὸ καλός]* appears to be the horizontal stroke of a *τ* begun too high.

above, or at the end of the line, there is a transition to a second speaker. In this place it never has any other meaning. Not taking into account the ornamental forms of the sign found under and adjoining the closing lines of each mime,¹ there are sixty-three cases of the use of the *παράγραφος* in Herondas to indicate change of speaker. These do not, however, comprise the total number of necessary changes of this sort; hardly more than from sixty to sixty-five per cent.

The *παράγραφος* indicates a change of speaker at the end of the line in the following verses: I. 66; III. 70, 76, 83, 85, 86, 88; IV. 18 [?], 38, 51, 53, 71, 78; V. 3, 7, 9, 18, 19, 25, 28, 34, 36, 38, 39, 62, 68, 79, 80; VI. 11, 21, 26, 36, 56, 73, 78, 79, 84, 88, 92; VII. 63, 76, 78, 82, 90, 92. It indicates a change of speaker in the middle of the verse, there being none at the end, in I. 7; III. 58, 81, 87; IV. 88; V. 73; VI. 19, 20, 22, 23, 25, 47, 97; VII. 3. At II. 78, it shows, like our marks of quotation, that the speaker has finished his own remarks, and is now about to introduce a citation from the laws of Chaerondas.

Only at one place, out of the sixty-three cases, is the *παράγραφος* certainly wrongly applied: at V. 55 it comes a line too soon. (At I. 65 it also comes a line too soon, but it is there cancelled, and given correctly below under line 66.) In the distribution among the speakers proposed by Bücheler and Crusius, though not in that proposed by Rutherford, it would seem that also after I. 81 and IV. 34 the *παράγραφος* had been wrongly used. But in view of the number of correct examples and of the nature of the blunders made, we ought to be slow to admit exceptions here. The verse I. 82 may well be put into the mouth of Threissa,² and the words in IV. 35-38 could have been said by one of the maids. At all events it can be urged that such was the distribution of parts in the manuscript from which the papyrus was copied, though this may not have been the original intention of the poet.

¹ At the close of a book the ornamental final sign was called the *κορυφή*: Isidore, *Orig.* I. 21; cf. Blam, *Griech. Palaeographie*, p. 311. In this papyrus it often resembles the *δωλὴ ἀπελευμένη*, with additional flourishes.

² This has been proposed, on other grounds, by O. Ribbeck, *Rhein. Museum* 47 (1892), p. 629.

There appears to be little doubt that the mark (—) above letters and the παράγραφος were inserted by the first hand.¹

II. Ὀβελός. — With the παράγραφος must not be confused other short lines — not marks of accent or of quantity — found both in the text and on the margin of the papyrus: they are usually drawn from right to left obliquely downward.² When placed in the body of the text, a line of this description — sometimes here taking a horizontal position, and ordinarily roughly drawn — actually cancels an objectionable letter or group of letters; I think these marks were, as a rule, made by the scribe in the progress of his writing, whereas erasures suggested on the revision are designated by the superior dot. In one place this mark appears to cancel a faultily placed παράγραφος (I. 65).

But the chief function of this obliquely drawn line is to call attention to verses³ requiring examination for one reason or another: and, since in this function — though hardly in its form — it resembles the Ὀβελός of the Alexandrines, it may provisionally receive this name.⁴ In these cases it is placed on the left margin directly opposite, or near, the first letter of the line in question. While it signalizes many verses it by no means calls attention to all corrupt readings or obscure passages. In many instances, if not in all, it appears to be the work of the first hand or of an immediate contemporary, since it not seldom calls attention to omission of letters, or to incorrect letters, where the correction is made by the first hand. But not all of the corrections that it points out as necessary are actually made, nor when made are they invariably in the first hand. The cases of the use of this obelus, which is extremely important for the text-criticism of our poet, may be grouped as follows:

a. — It designates verses where *letters* have been *omitted*, or

¹ The nature of the blunders made in inserting the παράγραφοι appears to prove that the signs were copied by the scribe after he had written a considerable part of the text, and were not due to his own conjecture.

² In IV. 51 the line has the opposite slant.

³ In II. 36 the mark is placed opposite a word in the verse (οὐκ). This is the only clear case where it is found not in the margin, in this function.

⁴ It is probably forcing language a little to name this sign an Ὀβελός. The obelus of Homeric and Platonic text-criticism was used distinctively to indicate athetesis; combined with other signs, however, it had many other values. Thus

wrongly given, in the first draft, but are supplied or corrected either by the first or by a later hand: II. 3 (NYN becomes νην, with H written above by first hand); III. 45 (HMEΘA—ημαιθα, AI above, late hand?); III. 46 (KAAIOYCAE KACTOY—A before E erased in line); III. 80 (ΦEP OCAC—φερεινοσας, εν written above, first hand; see pp. 172 f.); IV. 10 (ΙΔΕΩ—Λ above the Δ, first hand?); IV. 67 (αν]ACIMOC—CΙΑΛOC, first hand?; earlier in the line also erasures by cancellation and superior points); IV. 76 (after ΕΡΓΑ, TA inserted, late hand [Crusius]?).

b.—In the following, marks of *accent* are added: II. 83 (KAYTOCTACAYTOYΘAΗ; acute on first O, circumflex on H; also coronis at bottom of line after TAC: all probably by first hand); III. 6 (ΧΑΛΚΙΝΔΑ, acute on I); and VIII. 14 (ANNA, circumflex on ultima; first hand). See also IV. 2, under *d*, below.

c.—At III. 49, ΚΑΛΗΘΙΝ ΩCTE, after N above the line, in the first hand, a *coronis* is inserted, probably in first draft; also at II. 83 (see under *b* above).

d.—A *short vowel* is designated as such in VII. 108 (ΕΛΑCΑΙ; a ~ over A, in first hand?), and at IV. 2 (ΠΥPACTON; a short ~ is put over A, but at the same time a P is written above the T; the Y also bears a ~: see p. 177, note 2, above).¹

e.—At the following places a *corrupt text* is indicated but no attempt is made to correct it, either by the first hand or by later

among the τὰ παρατιθέμενα τοῖς Ὀμηρικοῖς στίχοις Ἀριστάρχεια σημεῖα we read of the obelus, figured as a short horizontal line: ὁ δὲ ὀβελὸς πρὸς τὰ ἀθετούμενα ἐπὶ τοῦ ποιητοῦ, ἤγουν νενοθυμένα ἢ ὑποβεβλημένα (Osann, *Anecd. Romanum*, p. 3; cf. Nauck, *Lex. Vindob.* pp. 271 f., also 274 f., 277 f.). In Plato texts: ὀβελὸς πρὸς τὴν ἀθέτησιν· ὀβελὸς περιεστιγμένος πρὸς τοὺς εἰκαλοὺς ἀθετήσεις (Diog. Laert. III. 66). Our "obelus" in Herondas may sometimes be used with this value, but probably not: its various uses, as we have surveyed them, better fit the Aristarchean διπλὴ ἀπεριστικτος (πρὸς τὰ ἐνάντια καὶ μαχόμενα, καὶ ἕτερα σχήματα πάμπολλα καὶ ζητήματα). It also differs from the obelus of the classical manuscripts, in that on our theory it is merely a conventional sign, originally adopted by our scribe and used by him as a memorandum, whereas the ordinary obeli represent a tradition of literary criticism going back usually to the Alexandrine age, and were copied from manuscript to manuscript; cf. Weil, *Mélanges Gramx*, pp. 13 ff., on obeli in the mss. Σ and Β of Demosthenes.

¹ Except at this place, which was probably obelized for other reasons, no (˘) is found at all in obelized verses. This suggests that these (˘) marks were in the text before the obeli were written on the margin.

hands : V. 59, Rutherford supplies (σ)ε ; VI. 63, ΟΙΚΕΙΝ corrected by Crusius to οἰκόν [i.e. οἰκόν], by Rutherford and others to οἰκόν ; VII. 35 a fragmentary verse : obelus of peculiar form, inserted at first draft? ; VII. 46, if not a grave accent, the obelus calls attention to ambiguous grouping of letters ; VII. 88, 96, corrupt lines : restoration uncertain ; VII. 110, end of line unintelligible to scribe : probably ἡθύν ; VII. 126, correction is attempted but left incomplete : VIII. 21, fragmentary line.

f. — In three places there seems to be nothing the matter with the text ; all of the lines, however, appear to have something interesting to the scribe : IV. 32, its ambiguous construction ; IV. 50, perhaps, its droll Homeric reminiscence, and VII. 71, the extraordinary form of oath.¹ Except for the consistent and exclusive use of the oblique line elsewhere to indicate corruption of text, we might infer that it was here used, like the *δελή ἀρεπίστους*, ascribed to Aristophanes of Byzantium, to point out passages remarkable for some reason or other. Otherwise it may have been only an accidental memorandum sign arbitrarily adopted by the scribe when engaged in revision.

III.

THE EARLIEST CORRECTIONS.

THE subject of the earliest corrections in the papyrus, — their relation to the original, and to later corrections, and their chronological sequence — is important in determining the character of the original of our copy and that of other manuscripts possibly used for collation. It is at the same time an extremely difficult subject, especially when investigated through the medium of a photographic facsimile of the papyrus, in which many peculiarities of the original fail to reproduce themselves. My remarks on this subject are offered tentatively : they are doubtless open to correction in detail, though I trust not to serious modification.

¹ Possibly, however, we ought to rule out these also. For in IV. 50 there seems to be a στυγή after *lover*, which, however, may have been put in, not as a punctuation mark, but like the *ὁδομασσή* — to be sure, not elsewhere occurring — to mark off the τ from *ἡμέρα* (cf. *Proem.* 11, for the only other certain instance of this sort in the papyrus; but see above, p. 170, note 2). And in VII. 71, attention may have been merely called to *μά*, as different from the *μά*, with circumflex accent, elsewhere found in the manuscript (e.g. I. 85, IV. 20, etc.).

An independent examination of the internal evidence available, in the collection of which the notes of Kenyon and of Crusius have been most helpful, makes it possible for us to reconstruct the early history of our papyrus somewhat as follows :

The scribe had before him, as the original to be copied, a manuscript in which the verses were written line by line, with occasional spacings to indicate punctuation ; it was also provided, at least to some extent, with diacritical marks—*παράγραφοι*, the signs ^π, ^ν, but not completely at least with signs for accent. It was written on the whole legibly, and in a style of writing not differing essentially from that of the papyrus, and exhibited peculiarities of orthography such as prevailed only in late Alexandrine times, and afterward. Not to take into consideration the perishableness¹ of papyrus manuscripts when much used, this original could not have been prepared much before the first century B.C., if even as early as that.

This original manuscript the scribe now copies,² with reasonable fidelity, cutting himself a new reed once or twice. In copying he makes mistakes of various sorts : occasionally he unconsciously changes the Ionic forms of the original into the more familiar Attic forms,³ and sometimes slightly blunders in his grammar and syntax ;⁴ here and there he appears to be carrying the thought, and not the exact words of the original in his mind, and thus when he writes he unconsciously substitutes a new word for the word first read ;⁵ of course he makes mistakes in reading the letters, and occasionally gives us nonsense, and also writes verses metrically impossible.

¹ Cf. Plin. *N. H.* XIII. 83 : he speaks of papyri two hundred years old as *longinqua monumenta*, rarely met with.

² That our copy was not written from dictation is clear from the nature of several blunders, where the forms of the letters, not their sounds, are misapprehended : e.g. I. 2 (ΑΠΟΙΚΙΗC for ΑΓΡΟΙΚΙΗC) ; I. 76 (ΔΙ for Π, in Διυθεω) ; V. 65 (ΕΑΘΙΝ for ΕΛΘΙΝ : ελθεῖν) ; III. 19 (ΔΑΙταρωτεραι : ΔΙ for ΔΙ : i.e. δὲ λεπρότεραι) ; III. 34 (ΑΤ for ΑΓ in αγρευ) ; IV. 94 (Δωι for Λωι).

³ For example : I. 39 (χημαρας for κημαρας) ; II. 7 ([πδ]λεωσ for [πδ]λιωσ) ; II. 36 (οικιας for οικιης) ; III. 59 (του for κου) ; V. 63 (αυθις for αυτις), etc.

⁴ He makes *λθεις* masculine in IV. 21 ; writes aorist subjunctive for future indicative in VIII. 3 (θαλψη after μέχρι(ς)), and present subjunctive for aorist optative in III. 52 (βαλλι changed to βαλοι).

⁵ At II. 64 he writes *μοιρα*, but at once changes it to *μυθο* by drawing his pen through the middle letters and writing *ισθο* over *οιρα*. At III. 82 he wrote

Some of his errors he detects just after they have been made, and these he corrects on the spot, either, when possible, by changing the actual forms of the letters, or by drawing his reed across the wrong letters and writing the correct ones just above. In the actual progress of writing the first draft he probably does not copy the *παράγραφοι*, possibly not all the diacritical marks, and certainly not all the accents.

His draft now completed, he takes it in hand for revision. That the original scribe revises the manuscript, and not another hand, is clear from the handwriting of many of the corrections. At first he carefully collates his copy with the original, and corrects innumerable blunders. It is at this time¹ that he puts in the *παράγραφοι*, and some of the diacritical marks: letters and words to be omitted he now neatly indicates by putting points over them; letters or words to be substituted he now writes in between the lines, just above those that he had mistakenly written. Some of the errors or obscurities in his own written copy he cannot correct from his original: in these instances he dashes an "obelus" in the margin to mark the verse as one requiring subsequent attention.²

This collation now finished — a hurried collation, since he leaves a number of corrupt passages, not only uncorrected, but also unnoticed — he examines the "obelized" lines in detail, and here for the first time appears to have called in the aid of a second man-

παῖς (fut. of *παῖς*); probably thinking of what he had written at 63; for the form, cf. *Anth. Pal.* XII. 211, *Anacreont.* 38. 3): the correct word was *παῖς*. At III. 93, where he first wrote *παῖς*, probably following his copy, he at once changes the word to *παῖς*, apparently a sudden conjectural emendation suggested by the context; *παῖς* is more probable: cf. Crusius *ad loc.*

¹ The fact that the *παράγραφοι* are twice put in a line too soon suggests that the scribe's eye ran down the column as he inserted them, and this would not have been the case if he had written them in each time after writing the line (cf. L. 65, V. 55).

² Cases where the obelized lines contain corrections certainly written by the first hand are II. 36, III. 30, IV. 11 and 67; perhaps also IV. 70. There is uncertainty about some of the other lines.

It might be urged that the obelus was inserted by a late hand to call attention to much-corrected verses. But it may be replied, first, that the obeli have the characteristics of the first hand, and, secondly, that many other verses showing much greater correction are not obelized. The explanation given above accounts for all the phenomena; the other one does not.

script: i.e., he uses a second manuscript only to correct otherwise obscure passages, not for the purpose of preparing a critical edition.¹ In this second manuscript the accents in particular were more fully given than in his original, and the reading of the text was different in a few places; for the obelized lines in question he adopts the readings and corrections suggested by the manuscript, though occasionally he appears to reject them on second thoughts.

From the spasmodic way in which the *στιγμαί* are put in, we might infer either that the scribe began to copy these marks while first writing, but soon wearied of the effort and gave it up, only now and then later in the progress of this writing copying a *στιγμή*, or, what is more probable, that he or another later hand at a subsequent time began, but did not complete, the task of punctuating with the points.²

The following examples, taken with those mentioned above and in the notes, will at once bear out and elucidate some of the positions here taken.

IV. 83. χ ΚΑΛΟΙCΙΕΜΤΡΟΙC. At first examination and comparison with his original the line looked faulty, and was obelized, but on closer comparison he found that by inserting λ after Π it became intelligible. He thereupon cancels the obelus. (On the M, see p. 176, top.)

IV. 10. Here he had written $\lambda\Delta\epsilon\omega$, which could not be right. Appeal to the original failed to solve the doubt. An obelus is dashed in: on comparison with another manuscript, or perhaps as a result of his own conjecture, he now writes $\lambda\epsilon\omega$.

III. 36. ΟΙΚΙΑΝ. After comparing his original and correcting A to H,

¹ Except in obelized lines, there are no first-hand corrections in the manuscript that must be accounted for on the theory of an appeal to another manuscript. (For in VI. 38 $\kappa\alpha\lambda\acute{o}\nu$ for $\sigma\phi\acute{o}\nu$ is in a later hand, and in I. 15 — $\mu\upsilon\iota,\sigma\sigma\omicron\nu$ — the coronis was inserted merely to indicate an elision of α (i.e., not $\upsilon\lambda\acute{o}\varsigma$), of course not to differentiate $\mu\upsilon\iota\sigma\sigma\omicron\nu$ from the other reading $\mu\acute{o}\varsigma\delta\sigma\omicron\nu$, preserved in various proverbial forms, here given in the margin in a late hand.)

² If the insertion of the *στιγμαί* had been undertaken by the scribe, it probably would have been carried out to the end, as were the other parts of his collation. He could hardly have inserted these marks, at least at the earliest stage, except as he copied them; but it is hardly conceivable that the original manuscript could have been as erratically punctuated as the earlier *στιγμαί* indicate. The points were certainly put in after the verses were written, since no space is allowed for them. In view of all these facts it seems more likely that the *στιγμαί* were, in the main, the work of later owners of the manuscript.

the word is still puzzling: he obelizes it; later, on comparison with another manuscript, he inserts the acute accent, which shows that this is *οἰκίον*, not *οἰκίον* (cf. VI. 63, and p. 182).

V. 19. ΔΟ is corrected to ΔΕ (*δοῦμαι*, i.e. *δέομαι*, to *δεῖναι*): hence Ο and Ε in the original manuscript must have resembled each other. See on VIII. 3, above, p. 174, note 1.

VIII. 6. ΚΑΙΑΘΗΘΩΝ. This reading, suggested by the *καίθηθω* at the beginning of the line, is on revision seen to be false; the scribe points C, H and C, and changes T to Y, restoring the correct reading *καίθηθω*.

III. 45. The scribe wrote ΗΜΕΘΑ (for *ἡμεῖς*), probably through association with 1st pl. mid., and not because he pronounced Ε and ΑΙ alike; the latter is not to be expected in a manuscript of this date, and there are no other cases of this confusion in the papyrus: of course early ΕΙ is often given by Ι, and not seldom even ΕΙ as written is corrected, by a superior dot, to Ι. The correction at III. 45 was made by a later hand.

The manuscript, thus prepared for use, passes into other hands. In its later history it suffers more or less modification. Errors previously undetected are now corrected (IV. 61, 80, etc.); conjectural emendation is attempted, sometimes unhappily. Readings, interlinear or marginal, are apparently imported from other manuscripts, from Herondæan quotations in other authors, or, in the case of some proverbial expressions, from variant forms in literature or life. The glossator appears with his bits of scholia, very few in number, and in abbreviated form.

In making this attempt to ascertain the oldest accessible readings on record or reasonably to be deduced from the record, we by no means would assume that text-criticism should cease upon the completion of this task. Indeed the large work will yet remain of tracing the text back to the pen of the author, and in this more interesting work conjectural emendation must play a large part. But the conjectural reconstruction of the text can never safely begin until the utmost possible has been made of the record.

IV.

Σφρηγίς IN HEROND. I. 55.

THE facsimile of the papyrus at I. 55 reads :

KINEWNAΘIK^τ  HPIHN CΦP^ς 

The gap at the middle, between τ and η, in which there is room for from seven to nine letters, has been filled by Bücheler and others so as to read *ἀθικτ[ος] καὶ Κυθ[ηρίην]*;² by Crusius and others, *ἀθικτ[ος] ἐς Κυθ[ηρίην]*. The latter is palaeographically more probable. The close of the line is universally understood to be *σφρηγίς*; but the traces of the ink quite as well agree with *σφρηγῆς*, or even possibly with *σφρηγῆ*. The very distinct break in the continuity of the writing before the letters σφρ shows that there is a pause in the sense at this point, i.e. that the last word cannot be taken closely with the foregoing. It is mainly in the light of this consideration that the interpretation here offered is new.³

Now *σφρηγῶ*, with its short penult in classical usage, is impossible, and is hardly to be justified by Oppian, *Cyn.* III. 368, where *σφρηγά* might be read for MS. *σφρηγῆ*, or by Draco Stratonicensis (p. 119. 7 Hermann), who gives *σφρηγῶ* in a list of words with long penult, — a list teeming with demonstrably false quantities.⁴

¹ The final letter is probably σ, but it may be a blotted ι.

² There are traces of the σ of *ἀθικτος*, and *Κυθ* is fairly certain. The space between this σ and *Κυθηρίην* appears to me much too small for *καὶ*, at least as *καὶ* is written a few lines below, and elsewhere (I. 66, 86; VII. 71, etc.).

³ Rutherford has proposed *ἀθικτος ἐὼν Κυθήρης ἤν, σφρηγίς*, but it cannot be wholly right: it offends against the metre besides being too much of a departure from the clear traces of the letters on the papyrus. All other editors have combined *σφρηγίς* closely with the foregoing words: either with *ἀθικτος*, or with *ἡ Κυθήρης* (Bücheler's first proposition).

⁴ If *σφρηγῆ* were possible, it would refer to the manly vigor and strength of the athlete Gryllus, lover of Metriche. In an epigram of Leontius we read of an aged athlete vanquishing his vigorous younger rivals: *πρέσβυς ὅτι σφρηγῶντας ἐν ἱπποδάμῳ πλέος ἀλκῆ | νικήσας, Ανθή. Pal.* XVI. 359; cf. also *ἤβη σφρηγῶντες ἐμπορεύονται*, said by Achaeus *περὶ τῆς εὐεξίας τῶν ἀθλητῶν διηγουμένος*, *Athen.* X. 414 C, D. (Nauck, p. 747). — *Σφρηγῆς*, if admissible, could be taken either as a parenthetical interrogative (like *γελῆς* in II. 74), addressed to Metriche, — 'Don't you glow with desire?' (at this description); or as a parenthetical remark — 'Ah! you glow with desire, I see.'

more probable possibilities. If the lexica and word-lists are to be trusted, this sense of *σφραγίς* is mainly petrographical and technical, and not popular. There remains to be considered the interpretation which takes the expression—*ἄθικτος ἐς Κυθηρίην σφραγίς*—in a figurative sense, ‘a seal unbroken in love,’ or ‘a seal of inviolate virginity.’ In support of this view of the passage Crusius cites Nonnus, *λυσάμενη δ’ ἄφανστον ἔης σφραγίδα κορείης* (*Dionys.* II. 305), and compares Paul the Silentiary,¹ *χρύσεος ἀψάυστοιο διέτμαγεν ἄμμα κορείας* | *Ζεὺς, διαδὺς Δανίας χαλκελάτους θαλάμους* (*Anth. Pal.* V. 217; also Suid. s.vv. *Κάσιον ὄρος, ἄμματα*). These examples appear to be very apposite, and almost silence objection, especially if we group with them the *ἄφανστος . . . σφραγίς* of Lycophron. But they obtain compelling force only on three rather violent assumptions, viz. (1) that the expression ‘inviolat seal of virginity’ in the words *ἄθικτος (ἄφανστος) σφραγίς* with some word for love or maidenhood, had become a stereotyped phrase in early Hellenistic poetry; (2) that as such it was here used by Herondas, and (3), that as such it was, centuries later, reproduced by Nonnus and Paul. The truth of these assumptions it will be impossible to demonstrate, at least from these examples or from others like them. No one would dream of turning to Lycophron as a mirror of current usage, and both Nonnus and Paul, Christians of the fourth century A.D., are quite too far removed from the Hellenistic age to require us to explain the phenomena of their art only on the theory of an imitation of Hellenistic models. The collocation *ἄθικτος σφραγίς* is not in itself so extraordinary as to require us, finding it in Lycophron, to view it as already a stereotyped one, or to prevent our taking the words separately under some circumstances. The words *ἄθικτος (ἄφανστος) σφραγίς παρθενίης, κορείης*, or the like, do not occur in the Anthology,

¹ It is not impossible that the received text of this much-quoted epigram may be incorrect, and that we should read *χρύσεος ἀθραύστοιο διέτμαγεν ἄμμα κορείας* for *ἀψάυστοιο*. This is the reading of Cod. Leidensis of Suidas, s. *Κάσιον*, though elsewhere we have *ἀψάυστοιο*. Probably the situation is conceived by Paul in this epigram, about Danae imprisoned in a tower, much in the way that a corresponding situation is represented by his contemporary Agathias in *Anth. Pal.* V. 294. 19, *ἐξαδάταξα φύλης πύργωμα κορείης*, and a classical adjective for *πύργωμα* and a word used in the sense of *πύργωμα* is *ἀθραύστος*, rather than *ἀψανστος*: Eur. *Hec.* 17, *πύργοι ἀθραύστοι*.

795; γυναικὸς θιγεῖν, Eur. *El.* 255: and in the gloss ἄθικτος· ἡ παρθένος in Bekk. *Anecd.* 828, where the word is quoted from Araros, a poet of the New Comedy, the reference is, of course, to a maiden. These and other examples justify us in taking ἄθικτος ἐς Κυθηρίην, like ἄθικτος Κυπρίδος, as '[hitherto] untouched of love, heart-free.'

It may be that in the appended σφρηγίς we have only an emphatic appositive, — 'untouched by love, — a very seal,'¹ — but I am disposed to believe that there is here an added thought, coördinate with the leading expressions: viz. the thought of *secrecy* which often attaches to σφραγίς and its derivatives, rather than that of inviolateness or purity. This sense — not sufficiently noted in L. and S. — may be illustrated by the following examples:² σφράγιζε τὸν λόγον σιγῇ, Solon *ap.* Stob. *Serm.* III. 79, p. 87 Mein.; ἀρρήτων ἐπέων γλώσση σφρηγίς ἐπικεῖσθω, Lucian *ap.* *Anth. Pal.* X. 42; ἄλλα δὲ θαύματα πολλὰ σοφῇ σφρηγίσσατο σιγῇ, Nonn. *Ioh.* xxi. 139; χεῖλεσι δ' ἃ φθόγγουσιν ἐπεσφρηγίσσατο σιγῇ, Nonn. *Dionys.* XLVII. 218; ἄλλα ἐ τέχνη χαλκείης ἐπέδρασε ὑπὸ σφρηγίδα σιωπῆς, Christod. *Escrhr.* 31, i.e. *Anth. Pal.* II. v. 31. Probably it was in large part the idea of secrecy associated with the seal that lent special force to σφραγίς and its derivatives in reference to the Greek mysteries: e.g., ἐπισφραγιζεσθαι means 'to initiate,' 'to make one of the μύστα (μύω, 'to be closed').' Of course the term has chiefly the connotations of authority and completeness, and these meanings develop especially in the numerous applications of the words to Christian usages. (Cf. Steph.-Dind. *Thes.*, s.vv.)

This interpretation — whereby σφρηγίς is understood to suggest the idea of secrecy — is quite in the spirit of Herondas. It furnishes an additional example of a motive elsewhere found in the mimes, that of caution and silence in matters of love and intrigue (I. 47,

¹ To Paul the Silentiary the expression might mean 'untouched of love, yet bearing love's own image or seal': cf. τὴν πρὶν ἐπεσφρηγισεν Ἐρω[θρασὺς]εἰκόνα, *Anth. Pal.* V. 274. — Rutherford's ἦν, σφρηγίς, 'look, his seal,' is rather abrupt and harsh, but it has the advantage of preserving the punctuation.

² In Aeschylus the same thought is expressed by κλής: ἀλλ' ἔστι κάμοι κλής ἐπὶ γλώσση φύλαξ (*Frag.* 316 Nauck), with which compare Soph. *O. C.* 1052, θνατοῖσιν ὦν καὶ χρυσέα κλής ἐπὶ γλώσση βέβακε προσπέλων Ἐδμολπιδᾶν, and *Frag.* 849. 2 Nauck. Cf. Lobeck, *Aglaoph.* I. p. 36, note. Ancient rings made of key and seal combined have been sometimes found: cf. Daremberg et Saglio, *Dict. Ant.* I. p. 295, fig. 349.

113 ff. It is also in keeping with the context and with the course of the argument. The crowning excellence of the young athlete commander is Gylis to the favor of the old Menelaos is his habit of fatherly interest and discretion. He is very rich, modest and quiet-minded.—and since it says in vol. III. "ἐκείνῳ τῷ ἀνδρὶ ἡδὺν ἀφ' ἑαυτοῦ ἐν τῇ τῇ ἀρετῇ. ἄλλος δὲ Κρόνος.—οὐκ ἔστιν." Finally, the juxtaposition of similar words at III. 62. 67 (ἐν τῇ τῇ ἀρετῇ καὶ τῇ τῇ ἀρετῇ) supports the interpretation. Perhaps, however, in the passage we have only a literary reminiscence of Aristophanes, etc.

If the passage would only allow us to read either ἄλλος καὶ ἡδὺν ὁμοῖον or ἄλλος καὶ ἡδὺν Κρόνος, ὁμοῖον the adjective having a negative force there would be no objection to connecting ἄλλος καὶ ὁμοῖον. "unlike and." But these appear to be untenable hypotheses one of the question.

T

MILAN SINON AND ARATIS

τῶνδε Μίλων καὶ Σίνων καὶ Ἀράτις
τῶν περὶ τοὺς πόδας τῶν Μίλων ἐκείνων
οὐκ ἔστιν ἡ ἀρετὴ. — HERACL. III. 24-26.

ὡς δ' ἐν τῇ ἀρετῇ Μίλων ἐκείνῳ περὶ τοὺς πόδας.
— THEOC. II. VII. 125.

THE FRAGMENT ON THEOC. II. VII. 125 in Cod. Amb. 222 (A), as printed by Ziegler, reads Μίλων ἢ Σίνων. "Ἀρετὴ ἐκείνῳ." The vulgate reading is Μίλων καὶ Σίνων. "Ἀρετὴ ἐκείνῳ." Before the publication of the Ambrosian Scholia, Meineke had already proposed to emend the vulgate to Μίλων ἢ Σίνων, "Ἀρετὴ ἐκείνῳ." This reading, apparently confirmed by that of Amb. A, where, however, "Ἀρετὴ ἐκείνῳ" stands (not "Ἀρετὴ ἐκείνῳ"), has been accepted, as definitely established, by Ziegler, Hiller, Maass, and others. It has been suggested by Hiller¹ with much plausibility

¹ The gloss in Diogenianus (VI. 67) on the proverbial expression . . . κατὰ ἄλλος καὶ ἐν τῇ τῇ ἀρετῇ. Suidas has ἐν τῇ τῇ ἀρετῇ.

² This reading, at least Μίλων ἢ Σίνων, is given also in Par. L (Reg. 2831).

³ On this theory of Hiller, I should be disposed to explain Σίνων as originally

that a Simon might have been mentioned by Aratus in one of his lesser poems¹ as a rival in love, and thus may have been regarded by the Scholiast as identical with Molon (ἡ Σίμων). Meineke's suggestion that Μόλων in the text of Theocritus is a corruption of Σίμων is hardly probable in view of the impossible quantity of the penult of the latter word.

The vulgate reading goes back to the manuscripts used by Callierges in his *editio princeps* of the Scholia (Rome, 1506); these were several in number (ἐκ διαφόρων αντιγράφων), and at least one of them appears to have belonged to the same family as Ambr. k.² If we bear in mind the easy confusion of the ancient abbreviation for καί with majuscule η it is not difficult for us to believe that even Ambr. k's Μόλων ἡ Σίμων may be a mistake for an earlier Μόλων καὶ Σίμων. On palaeographical grounds then we might accept as the original reading something like this: Μόλων καὶ Σίμων· Ἄρατος ἀντερραστής ('Molon and Simon: Aratus was their rival in love'), which involves the least possible departure from the manuscript tradition; or the vulgate reading Μόλων καὶ Σίμων· Ἄρατον ἀντερρασταί ('Molon and Simon: Aratus's rivals in love').

It is well known that in the Scholia Vetustiora of Theocritus lurk several pieces of extremely explicit information upon matters in Cos, which may safely be ascribed to an early commentator on the poet, himself a resident or native of the island, apparently recording and reporting stories and traditions locally current. This was Nicanor the Coan: he is certainly the authority for several items in the long Scholium on Theoc. *Id.* VII. 6, where he is cited by name (Νικάνωρ ὁ Κῶς ὑπομνηματίζων), probably also for much in *Schol. Id.* I. 57,

a marginal explanatory gloss in a text in which μολών (participle) was read or understood: see below, p. 197, note 2. The Scholiast of Ambr. k, endeavoring to stand on two stools and to reconcile the older and better text-tradition of Μόλων (proper name) with the suggested Σίμων, connects the two names in his remark on the verse. But I do not believe we are forced to such a conclusion.

¹ On Aratus's *ἑλεγμῶν*, *ἐπιγράμματα*, and *παίγνια*, see now Maass, *Aratea*, pp. 230 ff. (Wilamowitz-Kriessling, *Phil. Unt.* XII., 1892). In the epigrams Philocles was celebrated: *Anth. Pal.* XII. 129.

² For some remarks on the very complex sources of Callierges's Scholia, see Ahrens, *Bucolicorum Graecorum . . . Reliquiae*, vol. II. pp. lxi, lxii.—I regret that it is impossible for me to identify the manuscript sources at the place under discussion.

V. 123, VII. 1, 5, 10, 21, 45, XVII. 68, 69, *Syr.* 12; and doubtless to him also we owe some of our information as to Theocritus's family connexions at Cos.

Now it seems to me highly probable that among the minor *chroniques scandaleuses* of the prominent men of the little island was a piquant story to the effect that the great Aratus,¹ and two other persons known as Molon and Simon were rivals in certain love-affairs in which one Philinus figured; and that this story, gaining doubtless greater currency from the fact that the liaison may have been celebrated in part by Aratus in one of his minor poems, was recorded by Nicanor in his commentary, and lies at the bottom of the Scholium on *Id.* VII. 125. It is a matter of indifference to the argument whether the names Molon, Simon, and Philinus were the actual² names of the persons concerned or were partially fictitious, though the former seems to me more probable. At all events it was under the names of Molon and Simon that the story was current, and was reported by Nicanor. Molon, from the fact of his mention in such good company³ as that of *Id.* VII., which appears to have included,

¹ Maass, *Aratea*, c. viii (de Coe poetarum sodalico), discusses the question of Aratus's sojourn in Cos, and his friendships in the island, where he passed several years in his youth. The *Phaenomena* were there composed, and were read and recited to the literary coterie, mainly pupils of Philetas, among whom Aratus was a leading figure. — Were Herondas, and, after an interval, Artemidorus, the editor of Theocritus, later members of the same fraternity?

² From the fact that so many of the persons mentioned by Theocritus in *Id.* VII. appear under fictitious names (see the next note), and commonly in forms shorter than those of their actual names, Maass suggests that Molon is a pseudonym for an otherwise unknown Anchimolus (*Μόλων Ἀγχόμοιο*: 125). He and Knaack associate Philinus with Philocles, *ibid.* pp. 230 f., 322 f. But the identification of Philinus and Philocles is by no means certain: Philinus may well have been the actual name of a real person; and certainly Aratus's own name appears in this idyl in an undisguised form, as does also that of Philetas. The presence of the name Molon in Coan legend is an argument for the name Molon rather than Anchimolus: Dibbelt, *Quaestiones Coae mythologiae*, Greifswald, 1891, cited by Maass.

³ Philetas (v. 40); Aratus (v. 98, 122); Theocritus (*Σιμυλίδας*, vv. 21, 50, 96; cf. *Syrinx* 12); Dosiades (*Δουκίδας*, vv. 12, 27, 55, 91; unless Lycidas be O. Ribbeck's Astacides; he cannot have been Gercke's Callimachus); Alexander Aetolus (*Τίτυρος*, i.e. *Σάτυρος*, the name of Alexander's father, 72); Asclepiades (*Σικελίδας*, 40). With *Ἀριστῆς* (v. 99) Maass (*l.c.* p. 320) would identify Aristotherus the astronomer; Bergk makes of Aristis the astronomer Aristarchus of

besides Theocritus, Philetas, and Aratus, the names of Dosiades, Alexander Aetolus, Asclepiades, and possibly Hegesianax, Alexis, and Aristotherus, was doubtless a person of some distinction. And the same might have been true of Simon. Unless he was a Coan citizen, perhaps we have in this name a vague reminiscence of another hitherto unsuspected member of the Coan fraternity of poets, viz. Simias¹ of Rhodes, the author of the *Alae*, *Ovum*

Samos. Häberlin (*Carmina figurata Graeca*, pp. 53, 54) finds Hermesianax referred to in Ἀγέμεξ (vv. 52, 61); Alexis (Athen. xiv. 620 E; this name may be the double for Alexander Aetolus; cf. Crusius, *Jahrb. f. Philol.* 143, p. 387) in Ἀμόντας or Ἀμόντιχος (vv. 2, 132); and a possible Pericles, brother of Theocritus, in Εὐκρίτος (vv. 1, 131).

Probably Häberlin is not right in identifying Φιλῖνος (vv. 105, 121) with the runner of the same name, friend of Daphnis, in Theoc. *Id.* II. 115. The latter, as Wilamowitz has suggested, is certainly the famous Coan sprinter who won the prize in the δίαυλος at Olympia in at least two successive Olympiads (B.C. 264, 260: Euseb. *Chron.* I., Schöne, vol. I. pp. 208, 209; cf. also Paus. VI. 17. 2, who makes him winner at five Olympic contests—boys' race, B.C. 268? H. Förster, *Die Sieger in den Olympischen Spielen*, nos. 440-445). If there is at vv. 98 ff. a reference to an actual love-affair of Aratus's youth,—and this seems highly probable, since with all its anachronisms *Id.* VII. gains its main charm from its reminiscent character,—this Philinus, in the prime of his youthful powers in 260 B.C., could hardly have been old enough, if actually then born, to have been the object of Aratus's affections as early as *circa* B.C. 292-288, when Aratus appears to have sojourned in Cos as a young man. Perhaps, however, unless the name be wholly fictitious or a substitute for that of Philocles or of some other person,—it is the type of the youthful lover in Eupolis (*Pol. Fr.* 206, p. 314 Kock; so Crusius),—Aratus's Philinus may have been, as Häberlin suggests, the one named by Strato (*C.A.* III. p. 362 Kock), or the glossographer of Athen. xvi. 681, 682 (pupil of Philetas?). But the extreme frequency of the name Φιλῖνος, especially in Coan inscriptions, should make us pause before insisting upon an identification. The name, referring to different persons, occurs in the following inscriptions, not later than the third century B.C.: Paton-Hicks, *Inscriptions of Cos*, nos. 10 b 48; 10 c 36, 70, 75, 83, and 45 a 9.

It is an interesting coincidence that on the same set of stones, to be dated not far from B.C. 260, we find the names of Nannacus, Aratus (of course not the poet, who had long since left Cos), Philinus, and Simus (see the next note), referring each to more than one person. One of the older inscriptions (Paton-Hicks, no. 149) is that of a family Simonidae (Διδτ' Ἰκσίου Σιμωνιδᾶν).

¹ Of the date and literary affiliations of Simias we know little. He preceded the tragic poet Philicus (Hephaest. *Ench.* p. 58, Gaisf.: in Athen. v. 198 B.C. his name appears as Philiscus); wrote in his *carmina figurata* a kind of poem, on which Dosiades and Theocritus tried their hands, and like Asclepiades

and *Securis*, companion-pieces of Dosiades's *Ara* and Theocritus's *Syrinx*.

Have we not in Herond. III. 25, 26 another covert reference, if not to this particular story, at least to the two citizens or residents of Cos named in it? The Coan affinities and connexions of Herondas are everywhere evident in the mimes.¹ And in this same third mime we have at least two passages where we may safely see local allusions.² At III. 10, in ἤν Ναννάκου κλαύσω, there is probably a hit at a Coan worthy, if at the same time a personal application of a proverbial expression. The extremely rare proper name Nannacus is found on a Coan inscription of the same period as Herondas. And in τὰς ἐβδόμης τ' ἄμεινον εἰκάδας τ' αἶδε | τῶν ἀστροδιφέων (III. 53, 54), with its novel ἀστροδιφεύς, it is extremely likely that there is an allusion to the Coan school of astronomers, established by Aristothenes, if not earlier, and represented at the time of Herondas apparently by Dositheus.³ In the light of these parallels it does not seem to me too violent to assume that in the Molon and Simon of III. 25, 26 — which I suggest for the Μάρων and Σίμων of the papyrus — we have a third local touch, which would be highly appreciated by Herondas's Coan readers. At the same time we must not forget that the word Σίμων might carry with it, at this place, several secondary suggestions, since it is not only the name of many very respectable people in antiquity, but also has some other connotations at once ludicrous and otherwise objectionable.⁴ Names from the circle

gave his name to a metre. His date and birthplace, his poetic tastes and his activity as Homeric glossographer make it probable that he was, like Theocritus, a pupil of Philetas at Cos, circa 300–290 B.C. Cf. Susemihl, *Gesch. d. Griech. Literatur in der Alexandrinerzeit*, I. pp. 179–182; II. p. 660.

The name Σίππας might well be disguised in Σίμων, or the two could easily interchange: compare Πασσαρίας, Πασσάριος, Πασσών referring to the same person; Σίππας = Σίμων, Strabo XIV. 648. Cf. Crusius, *Jahrb.* 143, pp. 385 ff.

¹ Cf. Crusius, *Untersuchungen zu den Mimiamben des Herondas*, pp. 186 f., 8, 34, 56, 84, 113, 125, and the index to the same scholar's text-edition, where words found both in Herondas and in the inscriptions and other Coan records are designated by an asterisk.

² The fact that the ἐβδόμη and εἰκάς are spoken of as holidays both in this mime (53; cf. V. 80) and in Coan inscriptions (Paton-Hicks, *ibid.* nos. 369. 3, 402^a. 6, etc.) cannot be pressed, since these days were also elsewhere holidays. Cf. Crusius, *Untersuchungen*, pp. 68, 113.

³ Maass, *Aratea*, p. 321, note 56.

⁴ Crusius, *Untersuchungen*, p. 60.

of the *doctus poeta* Aratus, itself the school of the poet-γραμματικός Philetas, might very well be chosen by the fond father in his attempt to examine his son on the rudiments of letters, the first step in literature (γραμματίζοντος τοῦ πατρὸς αὐτῷ). Possibly also in the Φιλαίνιον of Herond. I. 5, daughter of the go-between Gyllis,¹ we may see the double of the frail youth who had stirred the emotions of Aratus and his friends.

If, now, Molon (or Maron) and Simon belong together in the Coan story, it is clear that if the Μόλων² of Theocritus is correct, the Μάρων of Herondas must be wrong; or, *vice versa*, that the Μόλων of Theocritus must be a corruption of Μάρων. In my opinion Μόλων is too strongly fortified to be dislodged from Theocritus and his commentator. In its favor are the tradition of the best manuscripts, and, apparently, the text at the bottom of the Scholia Vetus-tiora. It is perhaps also sustained by Eustathius, who is full of Theocritean reminiscences, in the words Μόλωνες οἱ παρὰ τῷ κωμικῷ, ὃ τε ἦρως [read ἐρῶν] καὶ ὁ σκωπτόμενος (p. 882. 24). Now a hero Molon is nowhere mentioned in Greek literature, so far as I know, unless he lies behind the word Molon which is found in Coan mythology. I suggest that ἦρως is here a corruption for ἐρῶν ('the lover'), and that in appending this epithet Eustathius had in mind, though vaguely, the Molon of Theoc. *Id.* VII. 125. The Μόλων ὁ σκωπτόμενος is the one mentioned in Aristoph. *Ran.* 55. Eustathius might very well have here connected both the Molons with the poet of comedy, through a slightly confused recollection of a sentence in the Didymean commentary on Aristophanes, of which we

¹ The original form of the name here is Φιλαίνιον. The marginal variant Φιλαμίδος probably suggested itself to a late corrector of the papyrus because of the notorious betaera of this name (*Anth. Pal.* V. 202: cf. Crusius, *Untersuchungen*, pp. 43, 129). Perhaps, however, there is in this daughter of the athlete Gryllus's friend, a covert reference to the great athlete and runner Philinus named above, whose career resembles that of Gryllus.

² The reading μολών, participle, adopted by Ahrens and others from inferior manuscripts, and from a *varia lectio* of the Scholiast, is hardly probable. As the *lectio facillior* it probably arose from a misunderstanding of the proper name Μόλων, well attested by Ambr. *κ*—text and Scholia,—by the first hand of Medic. *ρ*, and by the Juntine, which is based in part upon a manuscript of the same family as Ambr. *κ*, as good as *κ*, if not better. This confusion was not a little helped by the μολοῖσα | τήρησον ποτὶ τὰν Τιμαγέττου παλαιστράν of *Id.* II. 96, 97.

have traces in the Scholiast on Aristophanes and in Suidas.¹ In this commentary Didymus had said that there were two Molons in antiquity, respectively actor and thief, and that Aristophanes here (*Ran.* 55) means the thief, since he was small of stature. Now in the passage cited above from Eustathius we are also told that there were two Molons, and that both were celebrated by the comic poet; whereas in fact only one Molon is mentioned by the *poet*, while it is the *commentator* that discourses of two Molons. This duality of Molons in Greek comedy according to Eustathius, arises from a misrecollection, on his part, of the Didymean commentary, since elsewhere he refers apparently to only one Molon as mentioned by a comic poet.² All these facts with others show, first, that Eustathius read his Aristophanes, his Theocritus, and his Didymus, and, secondly, that at least in two cases — where by a false association of ideas he gives to Aristophanes what Didymus had said, and where he turns a thief into a lover (or hero) — his recollection of his reading was of such a nature as to make it quite probable that the Theocritean Molon came into his mind and was duly noted as he endeavored to recall and record a bit of dimly remembered Didymean lore.

Retaining, then, the Molon of Theocritus, the question arises whether the *Μάρων* of the Herondas papyrus can be traced to an original *Μόλων* as written by the mimographer. There is no uncertainty about the reading of the papyrus: *ΜΑΡΩΝ* is unmistakable in both places where the word occurs. If an error was made by this or an earlier scribe, it must have come about in one of two ways, either through a misreading of the letters of the original text, or from some probably unconscious mental confusion, on the part of the copyist. The manuscript from which the papyrus was copied, though in the main quite legible, was at places obscurely written, and abounded in orthographical errors, among which misread letters figure largely, all of which may be seen from the corrections made

¹ *Schol.* Aristoph. *Ran.* 55: Δίδυμός φησιν ὅτι δύο Μόλωνες εἰσιν, ὁ ὑποκριτὴς καὶ ὁ λωποδύτης· καὶ μᾶλλον τὸν λωποδύτην λέγει, ὅτι ἐστὶ μικρὸς τὸ σῶμα. Suid. s. *Μόλων*: Μόλωνες δύο, ὑποκριταὶ καὶ λωποδύται.

² Eustath. p. 1852. 11: παρὰ τὸ μολεῖν δὲ ὁ Μούλιος Ἰωνικῇ ἐπενθέσει τοῦ ὤ· καθὰ καὶ ὁ τοῦ κωμικοῦ Μόλων καὶ οἱ μολίονες. — Eustathius's remark that Molons were large persons is probably to be traced to some other source, if not one of his own etymologies (*Μόλωνες οἱ πολυμεγέθεις ἀπὸ τοιούτου Μόλωνος*, p. 1834. 32).

by the first hand in his revised copy; this has been pointed out on pp. 182 ff. Now the letters OA in the writing of *circ.* B.C. 100–A.D. 100, or even earlier, might well have been dashed off by a scribe so as to be taken by a copyist for AP: interesting examples of these letters blindly written occur in our papyrus itself at IV. 29 (MHAON), and II. 78 (ΘAPCEWN).

But we are not reduced to the necessity of explaining the probable corruption on palaeographical grounds alone. As we have already seen, the scribe of this manuscript did not slavishly copy his original, letter by letter, but appears often to have carried the words in his mind, dictating them as it were to himself, and writing sometimes not the word he saw, but the word he thought he heard. Now in such a process it is quite possible that, in the case of an unusual proper name, the cognate sounds of the liquids λ and ρ might have become interchanged,¹ — as in the classical example of Alcibiades's pronunciation of Θέωρος and κόραξ as Θέωλος and κόλαξ — and that while our scribe saw Μόλων he wrote Μάρων. The mistake may have been made the easier by an association of ideas with Virgil. The writer of the papyrus manuscript, "who may be provisionally assigned to the second or third century A.D." (Kenyon), when Virgil had already become a text-book in the schools and was well known in the ancient world, might well have associated the supposed Maro of the original mime, whose name is there spelled out to a lazy school-boy, with the famous Roman.² It should finally be remarked that the Μάρων of the Coan inscriptions, to which reference has been made in illustration of the name in Herondas, cannot be taken into consideration in this connexion. Unlike the Nannacus, Simus, Philinus, and Aratus mentioned as found on stones of the third century B.C., this word occurs only in a late Christian inscription;³ perhaps

¹ For Alcibiades's mispronunciation see Aristoph. *Vesp.* 44, 45; Plut. *Alc.* 1. Cf. Ἀμωργός . . . λέγεται καὶ Ἀμολγός, Stephan. Byz. s.v. In one of the modern Cretan dialects ἄλλο is *arro*.

² To a scribe writing in Egypt after B.C. 50, the name of the Alexandrian Marion, the Olympic *παράδοξον* of B.C. 52, who won the prize for the pancratium and the wrestling match on the same day, and thus became the fifth Heraclian double-victor, would also have its associations. Förster, *Die Sieger*, nos. 579, 580.

³ "Μάρωνος. ἐ(ὦν) κ̅. Small stele, with aedicula in the centre of which is a cross within a circle": Paton-Hicks, *Inscriptions of Cos*, no. 339, p. 219.

the young man on whose gravestone it stands received his name, which is not a frequent one among the Greeks, in honor of the author of the Aeneid.

In view, then, of all these considerations, I do not hesitate to propose as, at least, a probable, if not a certain, reading at Herond. II.

24-26 : —

τριβήμερος Μόλωνα γραμματίζοντος
 τοῦ πατρὸς αὐτοῦ τὸν Μόλωνα ἐπέειπεν
 οὗτος Σίμωνας ὁ χρηστός.

NOTES.

EUR. ALCEST. 229, 230.

Καὶ πλέον ἢ βρόχῳ δέρην οὐρανίῳ πελάσσαι. The word οὐρανίῳ is suspicious, as the expression "sky-hung halter" is too extravagant for Euripides, though Aeschylus might perhaps have used it. Bacch. 1064, ἐλάτης οὐράνιον ἄκρον κλάδον, El. 1158, οὐράνια τείχεα, Tro. 1087, τείχεα οὐράνια, are not parallel cases. To call a *tree* or *wall* "high as heaven" is a common poetic hyperbole in every age. An instance more to the point is El. 860, οὐράνιον πῆδημα, but this is surely a far more natural expression than οὐράνιος βρόχος would be. Wecklein has suggested the reading ἀγχονίῳ instead of οὐρανίῳ; but the two words have little resemblance to each other, and it is hard to see how the change could have arisen. Possibly we should read οὐλομένῳ "fatal," "deadly," instead of οὐρανίῳ. The Epic form οὐλόμενος is found in three passages of Euripides — Iph. Taur. 1109, πύργων οὐλομένων (so the Cod. Florentinus; the Palatine has ὀλομένων, which is metrically impossible here), Iph. Aul. 793, πατρίδος οὐλομένης (so the Mss.), and Phoen. 1526, οὐλόμεν' αἰκίσματα. About the two first of these there is some dispute, and many editors read ὀλλυμένων and ὀλλυμένας with Erfurdt, believing that οὐλόμενος cannot mean "lost," "ruined"; but cf. Aesch. Prom. 397, οὐλομένης τύχας. About the third, in which οὐλόμενα has the desired meaning of "fatal," "baneful," there is no question. Sophocles has one *very* doubtful case, Antig. 840, οὐκ οὐλομέναν ὑβρίζεις. Here the Mss. have ὀλομέναν, but the metre requires a long initial syllable. If οὐλομέναν is right, it must mean "dead," as it is opposed to ἐπίφαντον; but Martin's οἰχομέναν is not a violent change, and brings out the antithesis better. To sum up, Euripides uses the word once in the required sense, and has two other cases where the form probably occurs, though with a different meaning. Aeschylus has the form once,

Sophocles probably not at all. When the influence of Homeric passages like Od. 10, 394, *φάρμακον οὐλόμενον*, is taken into account, it seems not unreasonable to suppose that Euripides may have written *βρόχῳ οὐλομένῳ*.

PETRONIUS, c. 65, BUECHELER.

Ego maiestate conterritus praetorem putabam venisse; ibid. praetorio loco se posuit. From the use of the word *praetorem* in the former of these two passages Mommsen (Hermes, XIII. p. 109) inferred that the scene of the *Cena Trimalchionis* was laid in Cumae, because it is certain from inscriptions (C.I.L. X. 3685, 3698) that in that city the chief magistrates were styled *praetores*. Friedlaender in his admirable edition of the *Cena* (p. 6; cf. "Wochenschrift f. klass. Philologie," Nov. 25, 1891) adopts the same view. If it were certain that Petronius in these two passages used the words *praetor* and *praetorius* in their strict sense, the argument would be conclusive. But there are several facts which make this extremely doubtful. The word *praetor* was one in the use of which there was great latitude. Originally denoting any leader or chief, it was long applied throughout a large part of Italy to the chief magistrates of towns. How widely this usage prevailed may be seen from the instances collected by Marquardt ("Staatsverwaltung," I.² pp. 149, 150). It continued among the common people even after their towns became colonies or municipia. There is evidence that in at least three Campanian cities — Cales (C.I.L. 4651, 4657, 3923), Capua (Cic. de Leg. Agr. II. 34, 92) and Cumae — the chief magistrates were called praetors; and what proof have we that this was not the case in others as well, e.g. Puteoli? The inscriptions, it is true, do not show this; but they do not in the case of Capua, although they are very numerous.

Again, the title "praetor" is one which a stranger like Encolpius might very naturally apply to a city official of whose precise rank he was ignorant, but who was attended by a lictor and a large retinue. We have as little reason to suppose that the chief magistrates of Trimalchio's city were really called praetors as that the same title belonged to those of Saguntum (Liv. XXI. 12, 7) or of Fundi (Hor. Sat. I. 5, 34). In the words of Teuffel (Röm. Lit. ed. Schwabe,

p. 745), "auch der praetor c. 65 kann nichts beweisen." In the second passage from Petronius quoted above, Friedlaender has tried to use the words *praetorio loco* in support of his position (see "Wochenschrift," *l.c.*). But *praetorius locus* is simply another name for the *locus consularis* — the place of honor at the table — and the expression has undoubtedly survived from the time when the chief magistrates at Rome as well as elsewhere were called "praetores." Cf. Sen. Cont. IX. 25, 2, *meretrix uxoris loco accubuit, immo praetoris*.

On the other hand, the difficulties of the view that Cumae is the scene of the Cena are very great. Trimalchio says (c. 48), *nam Sibyllam quidem Cumis ego oculis meis vidi in ampulla pendere*. Strange language, surely, if the speaker is in Cumae! Mommsen thought that Petronius wished to hold up Trimalchio to greater ridicule by making him relate events supposed to have occurred in his own city as if they had been seen on a distant journey. This view has found few adherents. On the other hand, Friedlaender frankly admits that if *Cumis* in c. 48 is right, the scene of the Cena cannot be laid in Cumae. Following Studnitzka, he holds *Cumis* to be a gloss which has crept into the text (see his edition, note *ad loc.*, and "Wochenschrift," *l.c.*). It is, of course, *possible* that this is so, but to assume that it is true without further proof is to suit the facts to a preconceived theory. Moreover, even if *Cumis* is a gloss, there is another passage that occasions difficulty, for in c. 53 the *praedium Cumanum, quod est Trimalchionis* is mentioned along with *horti Pompeiani*; a fact which Friedlaender vainly strives to explain away in his note *ad loc.* Either one of these passages might perhaps not be decisive, but to disregard *both* is surely to go too far, and is contrary to the principles of sound criticism.

SOPH. TRACH. 56, 57.

μάλιστα δ' ὄνπερ εἰκὸς ὕλλον, εἰ πατὴρ
νέμοι τιν' ἄραν τοῦ καλῶς πράσσειν δοκεῖν;

So the Laurentian. Vat. and Harl. have νέμει, which some editors prefer, following Matthiae. The principal difficulty is with τοῦ καλῶς πράσσειν δοκεῖν. Those editors who retain these words unchanged

regard them as an exegetical addition, the whole being equivalent to εἰ νέμει τιν' ὥραν τοῦ τὸν πατέρα καλῶς πράσσειν δοκεῖν. To this there is the fatal objection that δοκεῖν is unsuitable. Hyllus would be concerned about the *real* welfare of his father, not his *apparent* prosperity. The lines have been emended in many ways. The easiest of these changes is perhaps that suggested by Nauck, εἰ πατὴρ | νέμει νιν ὥραν τοῦ καλῶς πράσσειν δοκεῖν. Καλῶς πράσσειν usually means "to prosper," "be fortunate," but may also mean "to act rightly," or "fittingly." Cf. Soph. O. C. 1764, καὶ ταῦτα μ' ἔφη πράσσοντα καλῶς χώραν ἔξιν αἰὲν ἄλυτον, where Professor Jebb acutely observes: "καλῶς with πράσσοντα (not with ἔξιν), 'in a seemly manner,' 'duly' (Lat. *rite*). The fact that πράσσοντα καλῶς usually meant 'faring well' is no objection. The ancient Greek instinct for words was remarkably free from bondage to phrases." Cf. also Plat. Gorg. 507, C; Charm. 172, A. If now we read

εἰ πάρος
νέμει τιν' ὥραν τοῦ καλῶς πράσσειν δοκεῖν,

and take καλῶς πράσσειν in the sense of "to act rightly," the difficulty seems to be in great part removed. The idiomatic use of πάρος (like the Ger. *sonst*) with a present is well known. The most familiar case is doubtless the Homeric πάρος γε μὴν οὔτι θαμίζεις, Il. 18, 386. The sense will then be "if on other occasions he has (habitually) shown care for his reputation (for being thought to act rightly)." The change is certainly a very slight one.

H. W. HAYLEY.

ON HORACE, *Sat.* I. 4. 39.

Primum ego me illorum, dederim quibus esse poetas,
Excerptam numero.

Bentley (and before him N. Heinsius), against the almost unanimous testimony of the manuscripts, changed to *poetis*, citing S. I. 1. 19 atqui licet esse *beatis*; S. I. 2. 51 *munifico* esse licet; *Ep.* II. 3. 372 *mediocribus* esse poetis non homines, non di, non concessere columnae; and the passage which he found already quoted as a

parallel by *Acro.* S. I. 6. 24 *quo tibi. Tili. sumere depositum clavum fierique dabitur.* Bentley has been followed here by Orelli, Haupt, Vahlen, Scintz, Kießling, and others. Dillenburger, Krüger, Keller, Wickham, and Mewes (in the last edition of Orelli) retain *poetas*, but no one of them points out the flaw in Bentley's argument, or gives any reason for his preference except the weight of manuscript authority.

I have no doubt that Bentley was right in holding that Horace always used a predicate dative, and never a predicate accusative, after *Ecce esse* and equivalent expressions of permission. In *Ep.* I. 16. 61 *da mihi fallere, da iusto sanctorumque videri*, the manuscripts are pretty evenly divided between *iusto sanctorumque* and *iustum sanctorumque*; but the former is rightly printed in all the editions. The only other examples that occur in the poems are those cited by Bentley, in which the text may be regarded as certain. Bentley's argument fails, because the case here is not parallel to those which he cites, but involves a different principle. *Do* in our passage does not express permission, as *concedo* does in *Ep.* II. 3. 372, which is Bentley's nearest parallel; it expresses admission of an assertion, the granting of a claim; and the construction it introduces is that of indirect discourse. It is not the *do* of *Ep.* I. 16. 61, or of *S.* II. 3. 191 *di tibi dent classem reducere*, but of *Ep.* II. 1. 125 *si das hoc, parvis quoque rebus magna iuvare*. 'Esse poetas' stands for the 'sumus poetae' of the writers who claimed that distinction for themselves. This use of *do* is common enough in argumentative discourse; cf. *Cic. Tusc.* I. 25 *M. Quid hoc? dasne aut manere animos post mortem aut morte ipsa interire? A. Do vero. M. Quid si maneant? A. Beatos esse concedo.* For the dative *quibus*, cf. *Cic. Inv.* I. 53 *Socrates . . . nihil ipse adferre ad persuadendum volebat, sed ex eo, quod sibi ille dederat quicum disputabat, aliquid conficere malebat quod ille ex eo quod iam concessisset necessario adprobare deberet.*

C. L. SMITH.

Σκηνὰς πῆξαι.

In Liddell & Scott's lexicon, under the word πῆγμα, we find : —
 σκηρὴν π., to fix, pitch a tent, Andoc. 33, 9, Plat. Legg. 817 c (so
 in Med. σκηνὰς πῆξασθαι, to pitch their tents, Hdt. 6, 12).

In the passage from the pseudo-Andocides as well as in that from Herodotus, the expression is a purely military one; not so in the *Laws*. Here we have to do with the answer to be given to tragic poets who may request to be allowed to produce plays, and part of this answer is : —

μηδὲ δόξῃτε ἡμᾶς ῥαδίως γε οὕτως ὑμᾶς ποτὲ παρ' ἡμῖν εἶσθαι σκηνὰς
 τε πῆξαντας κατ' ἀγορὰν καὶ καλλιφώνους ὑποκριτὰς εἰσαγαγομένους κτλ.

I have never seen this passage referred to in the discussion of theatrical antiquities, yet it is obviously of interest, and it may be of importance, in the debate between the Old-Stagers and the No-Stagers. It is true that σκηνὰς πῆξαι here may simply mean that actors on coming to a town 'camped out' in the ἀγορά and lived there during their stay in the town. Yet at the time when the *Laws* was written, inns were not so rare that travellers were reduced to this necessity; and further the theatrical word εἰσαγαγομένους so closely following seems to belong or to point to σκηνὰς. But it is possible to look at the phrase in two other ways. It may be a survival from the time when as yet there were no permanent stage-buildings, and when σκηνή meant merely the hut or booth used by the actors as their dressing-room. (I use the word 'survival' here because the ideal city of the *Laws* was already provided with θέατρα (p. 779 D), and these, at the time when the *Laws* was written, must have included stage-buildings, whether the stage was raised or not. In a note on σκηνὰς πῆξαι in my article on σκηνάω, σκηνέω, and σκηνώ in the American Journal of Philology, XIII, p. 79, I did not observe that σκηνὰς taken in this sense must be a survival.) From this hut would be made the entrances of the actors, into it their exits, and on its front would be hung the scenery. The hut itself would be set on the edge of the circular orchestra, which might naturally be in or near the ἀγορά. The old 'market-orchestra' of Athens is an instance in point. A third view may be to take σκηνὰς in the sense of 'wagons,' — the wagons in which the travelling

troupes of actors carried round their scenery, costumes, property, and the like. These would be covered, to protect the goods from storms; they would be *σκηναὶ τροχήλατοι*, a phrase used by Aeschylus, *Pers.* 1000; cf. also Ar. *Ach.* 69, *ἰσκηνημένοι*, said of the envoys travelling in the covered carriages of the Persians; and *σκηνή* as used of the tilt of such a wagon in Xen. *Cyr.* 6, 4, 11.

Whatever be the meaning of the phrase, the whole passage seems to be our earliest mention of travelling troupes of actors.

M. H. MORGAN.

Μέλος 'song.'

Curtius in his Greek Etymology connects this word with *μεῖλια* and *μειλίχιος*; it would then mean originally something like 'softness.' Similarly Vaniček. This is a conspicuous example of how things are *not* named. There cannot be any doubt that *μέλος* 'song' is one and the same word with *μέλος* 'limb.' The meaning 'song' is post-Homeric, appearing first in Archilochus, Alcman, and one of the smaller 'Homeric' Hymns. The transition from 'limb' to 'song' is illustrated by the Sanskrit word *pāda*. *Pāda*, properly 'foot,' means a quarter of a slaughtered animal. Then it means a line of a four-verse stanza. Thence it comes to mean 'verse' outright, even of some different stanza.

So in Greek the rhythmical divisions, or phrases, of a song were once called its *μέλη*, or 'limbs,' precisely as long afterwards, by the same figure, they were called its *κῶλα*. The strophe of four phrases always predominated in the simpler sorts of lyric poetry. Such a strophe, for instance, was the elegiac distich, at the time when elegiacs were sung. It needs no great effort of the imagination to conceive it as a quadruped.

μέχρις τεῦ κατάκεισθε;	} fore limbs,
κ'τ' ἄλκιμον ἔξετε θυμόν	
ὦ νέοι; οὐδ' αἰδέισθ'	} hind limbs.
ἀμφιπερικτίονας.	

And I need only mention the stanzas of Alcaeus and Sappho, the form of the Attic scolion, and such early lyric scraps as Archil. frag.

88 and 94, to make clear the prevalence of the tetracolic strophe. The terminology in question grew up, I think, in the singing-school; boys were taught their songs phrase by phrase; they were made to sing and play them *limb-meal* (μελίζων); they called their singing lesson their μέλη, as they did their Homer lesson ἔπη. The antithesis of ἔπη and μέλη in such places as Plat. Rep. II, 379^a, X, 607^a, rests on ancient tradition.

How then did μέλος come to signify a *whole* song? At first by a sort of "synecdoche," just as we use 'stave' or 'strain' for a whole song. Indeed, these very words will fit perfectly as translations of μέλος in nearly all the earlier occurrences. As when Archilochus says, καλὸν ἐξάρξαι μέλος οἶδα, διθύραμβον (frag. 77), or Theognis (761), 'Let lyre and pipe sound a ἱερὸν μέλος', or Alcman (frag. 1) calls on the muse to begin a μέλος νεόχμον. So a score of other places. Often the plural, 'strains of music,' is used: Hom. Hymn. XIX, 16 (οὐκ ἄν τόνγε παραδράμοι ἐν μελέεσσιν), Aesch. Suppl. 809, Pind. O. II, 47, etc.; sometimes when a single composition is evidently meant (Pind. O. X, 84; I. V, 2). Nevertheless there are places in the earlier poets where the later sense of μέλος begins to appear: Alcman frag. 25, ἔπη τὰδε καὶ μέλος, 'these verses and this tune'; Echembrotus in Pausan. X, 7, 6, μέλεα καὶ ἐλέγους. And the sense 'lyric composition' is clear in Herod. II, 135; V, 95. The idea of music is always present, whether melody as opposed to words be intended (Alcman frag. 25, quoted), or instrumental music only (Theogn. 761, quoted; Pind. P. XII, 19; Alcman frag. 82; Sophocl. frag. 226 D; Simonides frag. 46), or, finally, song as opposed to instrumental accompaniment (Pind. N. IV, 15; O. X, 84).

Significant is the adjective ἐμμελής, established in the metaphorical sense 'suitable,' 'harmonious' in Simonides's time (ἐμμελέως, frag. 5), and recurring in Aristophanes and Plato. It is based on a phrase ἐν μέλει, which we find in Plato, Soph. 227^a (ἐν μέλει φθεγξόμεθα). This phrase also is of the singing-school. To Plato it doubtless meant 'in tune.' But originally, we may well believe, to sing ἐν μέλει was to sing 'in time,' following the rhythmical divisions. There are indications that ἐμμελής once referred to rhythm. First Sappho's ἐμμελέως πόδεσσιν ὥρχευντο (frag. 54). Then the dance ἐμμέλεια. This name was not confined to the tragic dance, but was used by Aeschylus (see Hesychius s.v.) of the σίκινις of the satyric drama.

In Herod. VI, 129 ἐμμέλεια means simply 'dance-tune.' Lastly, on τινὰ λόγων ἐμμέλειαν, Aristoph. Ran. 896, the Scholiast remarks, καταχρηστικῶς νῦν τὴν εὐρυθμίαν; perhaps wrongly, for ἐμμέλεια may here signify only 'harmonious combination.'

The opposite of ἐμμελής is πλημμελής (first, I think, Eurip. Med. 306), which points to a phrase πλὴν μέλους, 'out of time' (and tune). For this we have παρ μέλος, Pind. N. VII, 69, and παρὰ μέλος several times in Plato.

Of μελίζω, 'sing rhythmically,' we have spoken above. It first occurs Aesch. Ag. 1176 (and Pind. N. XI, 187). I suspect that Horace's *carmina dividēs* (Od. I, 15, 15) is a translation of this. Marini and Henzen interpret *carmen descendentes* in the *Acta Fratrum Arvalium* (ann. 218; see p. 33 of Henzen's edition) in a similar way.

The parallelism of the German *glied* and *lied*, which has sometimes been brought forward, is striking but illusory. *Lid*, 'limb,' and *liod*, 'song,' are separate words in old German, and without etymological connexion. Nor has μέλος anything to do with μέλω.

πλανοδίας, HOMERIC HYMN, III. 75.

πλανοδίας δ' ἤλαυνε διὰ ψαμαθώδεα χῶρον

is an "acephalous" verse, which I think has passed unchallenged hitherto, though its refutation lies in plain sight in Hesychius: πληνοδίαί . . . τῇ πεπλανημένῃ τῆς ὁρθῆς ὁδοῦ, τουτέστιν ἀδίκῃ. This gloss relates to another occurrence of the word, in a figurative sense. In our passage πλανοδίας should be read, as an adjective referring to βοῦς understood. We have spoken in the preceding note of πλημμελής, and the phrase πλὴν μέλους which it presupposes. In like way πληνόδιος comes from a πλὴν ὁδοῦ, 'out of the road.' The two words together show that πλὴν in former times had a wider range of meaning than 'except.'

FREDERIC D. ALLEN.

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